

One day, having been asked for help by the little creatures of the forest, the old magician brought a drawing for making a claydotscope. By turning it, they could observe the human world outaside the forest.



# RECIPE

The water (and sugar!) in delicious honey.

Algin and agar in seaweeds are effective thickeners.

The juice in flowers is a good colouring agent.

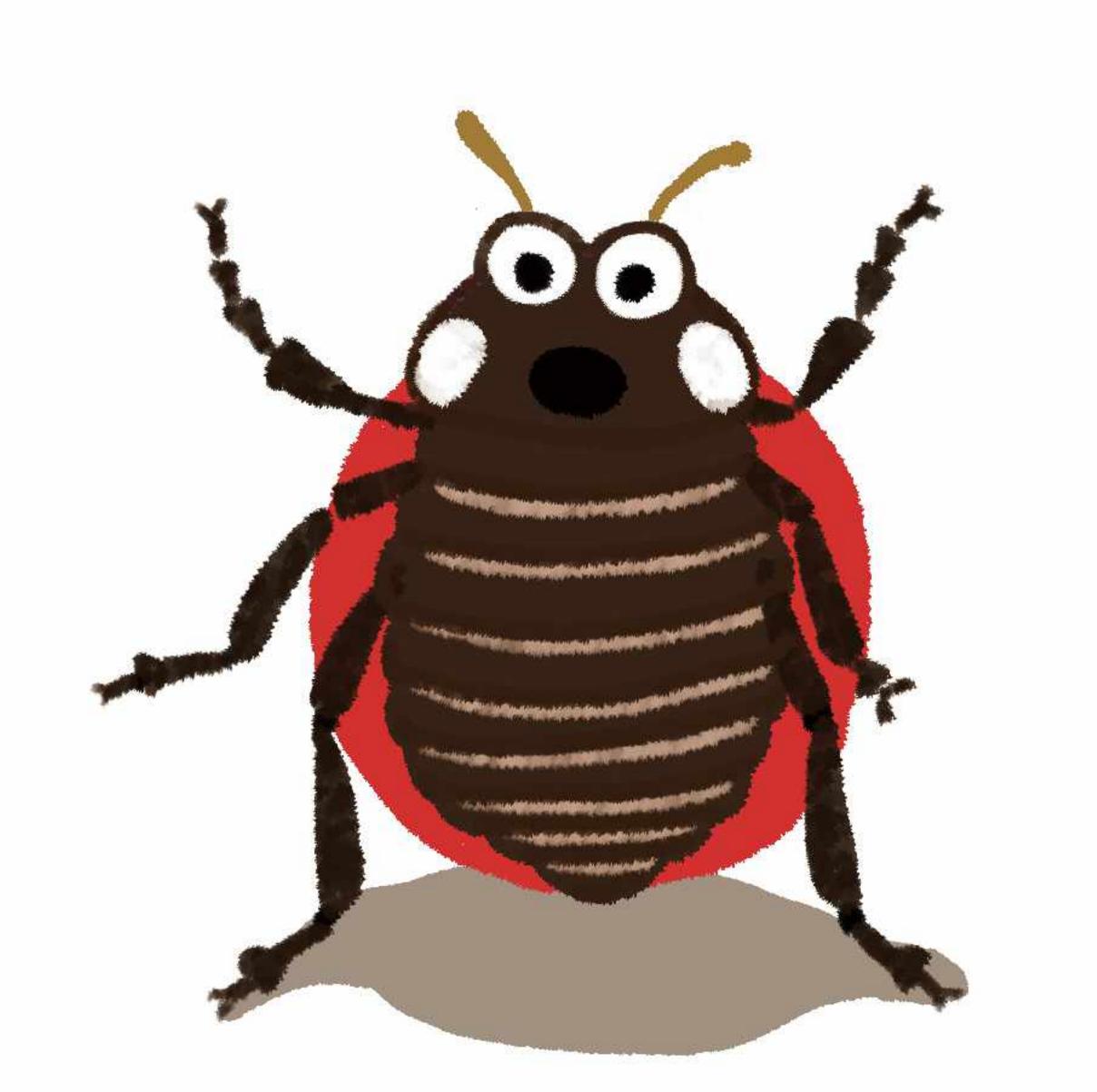


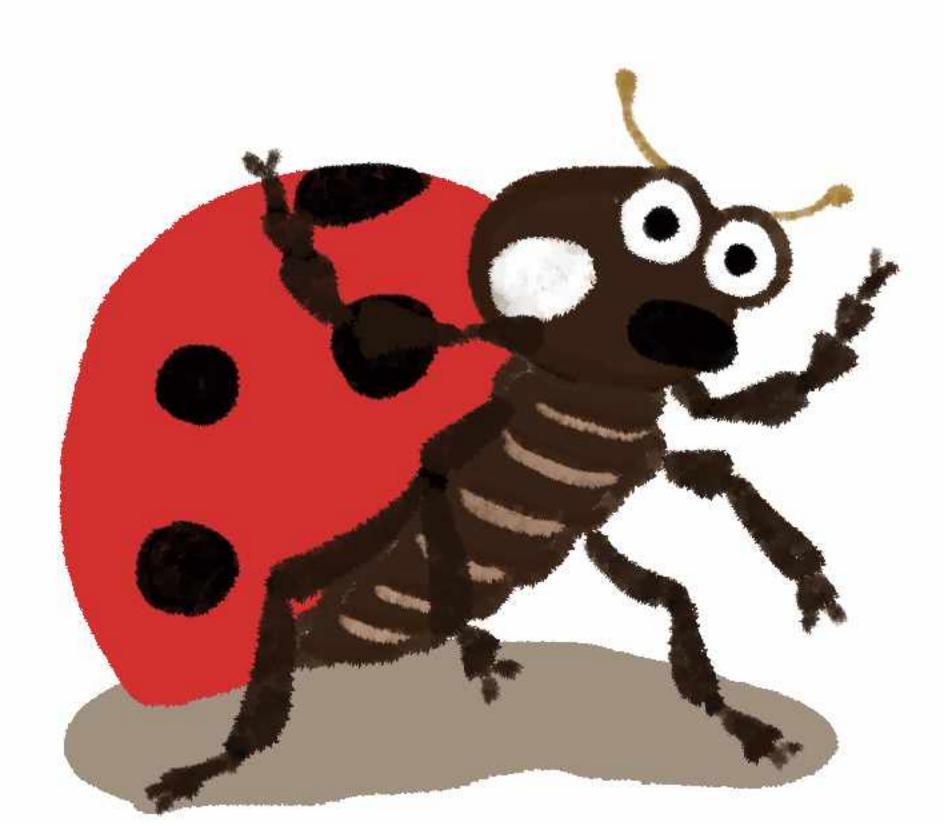
Mix and boil





Mr and Mrs Woodpecker are responsible for carving shapes into the tree trunk suitable for filling with coloured syrup. Meanwhile, the ladybird squad are sweeping up the woodchips.



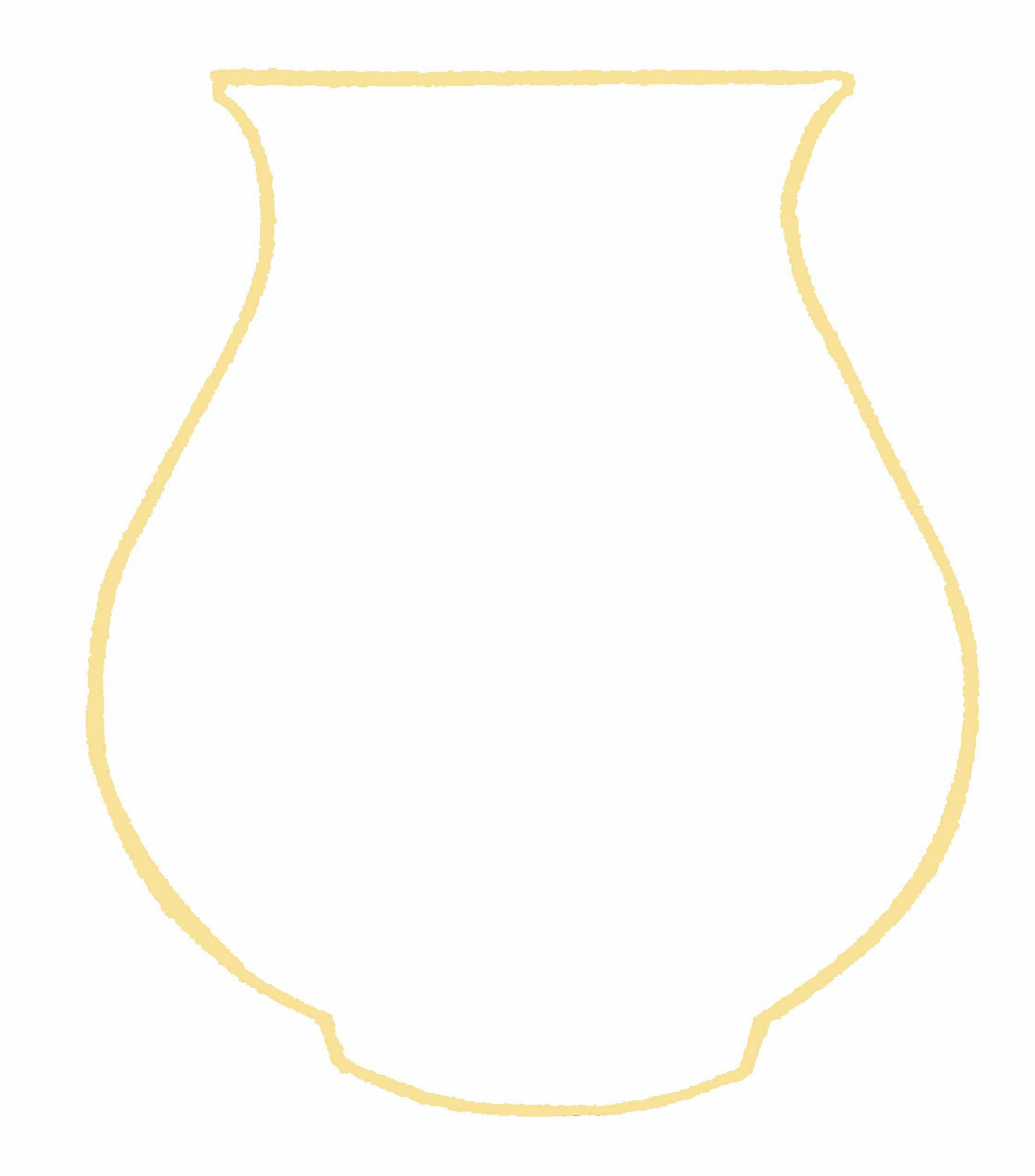


### Question:

How many members of the Ladybird Squad can you find in all the drawings?

Mr Hedgehog is pouring hot syrup into the mould.

The syrup in the mould will solidify into gummy candies as it cools.



Draw your favourite pattern on this jar!





The claydoscope's lenses are made from clear syrup poured into a tree stump mould. Forest dwellers are co-operating to lift it out the tree mould.



Did you know that Mr Woodpecker has red feathers on his head? It's the sign of a male woodpecker.

Making the body of the claydoscope, a huge cylinder, required the residents to gather a lot of clay.

The clay can be dug from deep in the earth like the
Little Mole or collected from dry, cracked earth on
the surface, and then crushed into tiny grains of clay in
a stone mortar like Mr Badger.

Always be aware of your surroundings for personal safety while collecting clay.

Also, do not dig holes around trails, which cause trip hazards for other people.

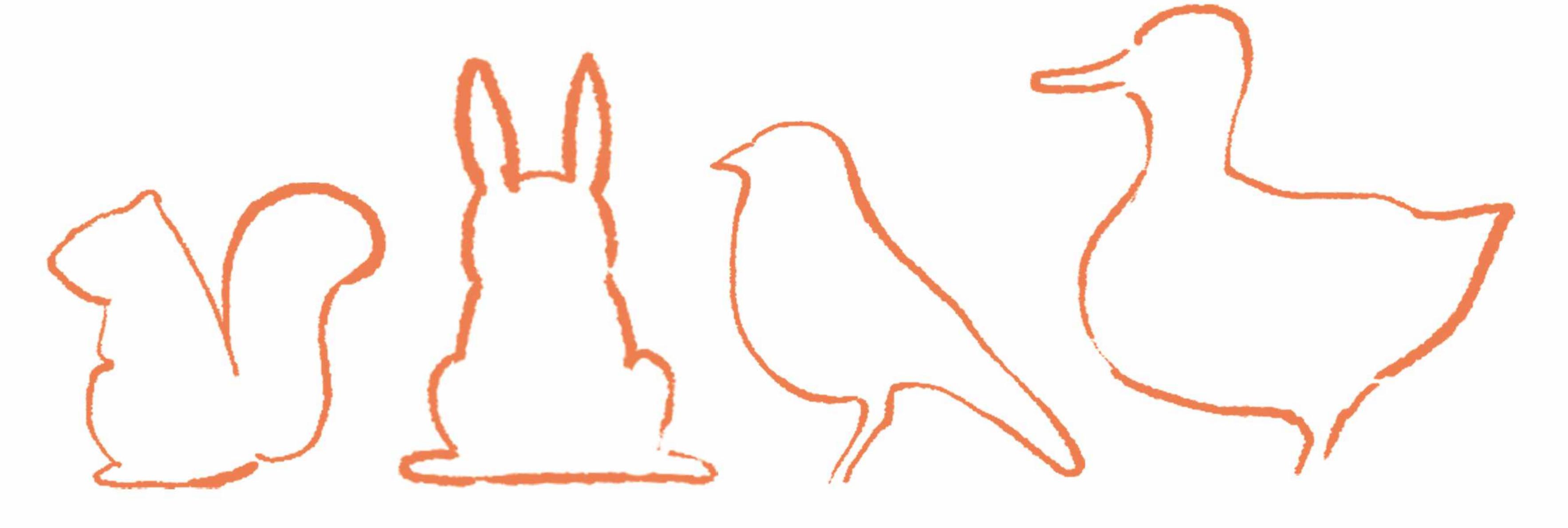






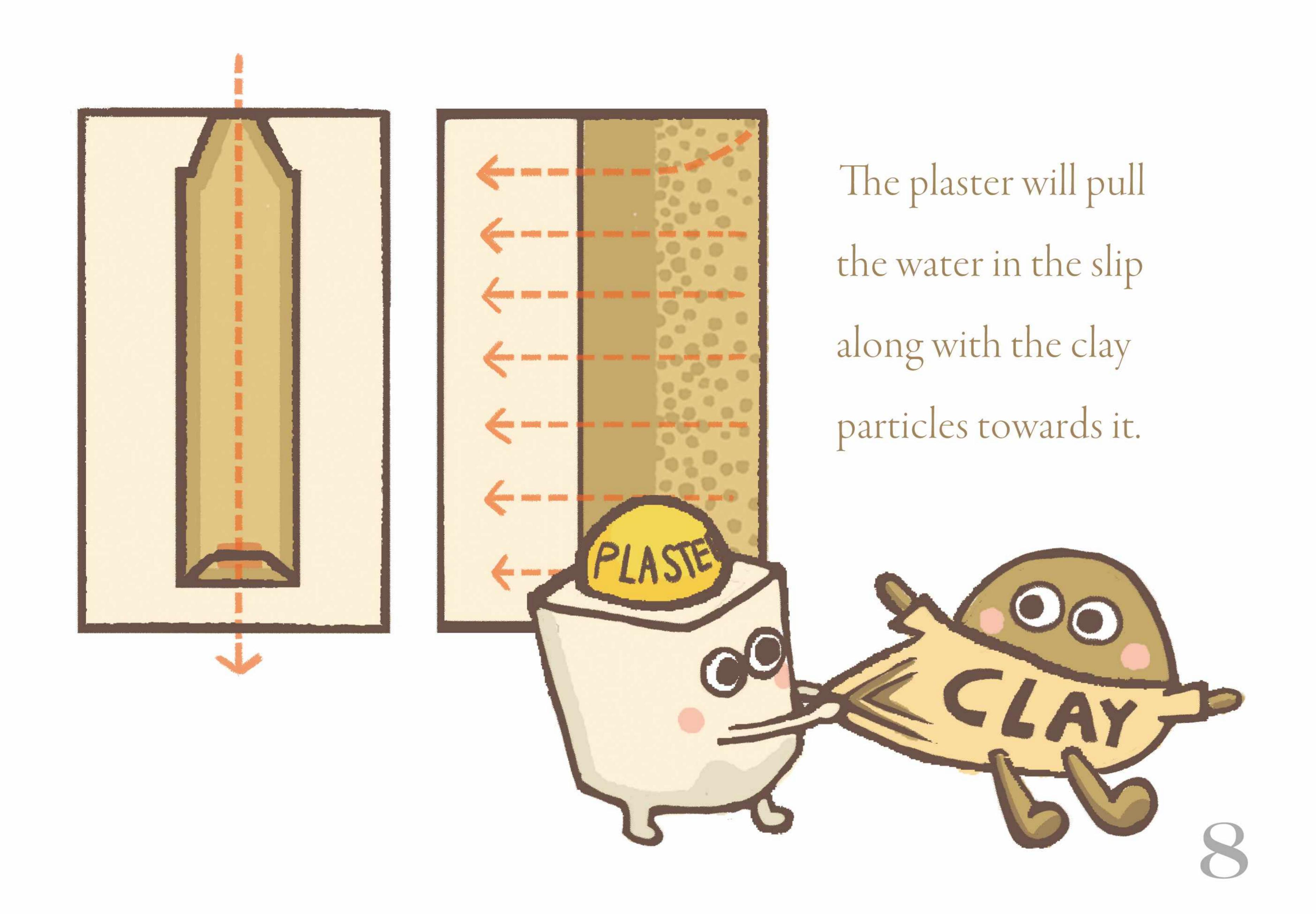
Forest dwellers are preparing the casting slip for pouring into the plaster mould:

- 1. The collected clay needs to be mixed well with water to make a thin slurry.
- 2. As Uncle Jackdaw did, the slurry is filtered through a fine cloth or sieve to remove stones and debris. Then it becomes a smooth slip.
- 3. The tiny particles of clay in the slip will sink to the bottom of the bucket, at which point Miss Squirrel can scoop up the excess water.



Moulds made from pottery plaster and water can absorb the water from the clay slip (also called casting slip), thus turning the slip back into solid clay (known as greenware).

After the mould has absorbed the water for a while, the (because the mould is too big for them) excess slip is drained out by opening the cork underneath the mould. Then, the clay adhering to the mould is allowed to dry and take shape.

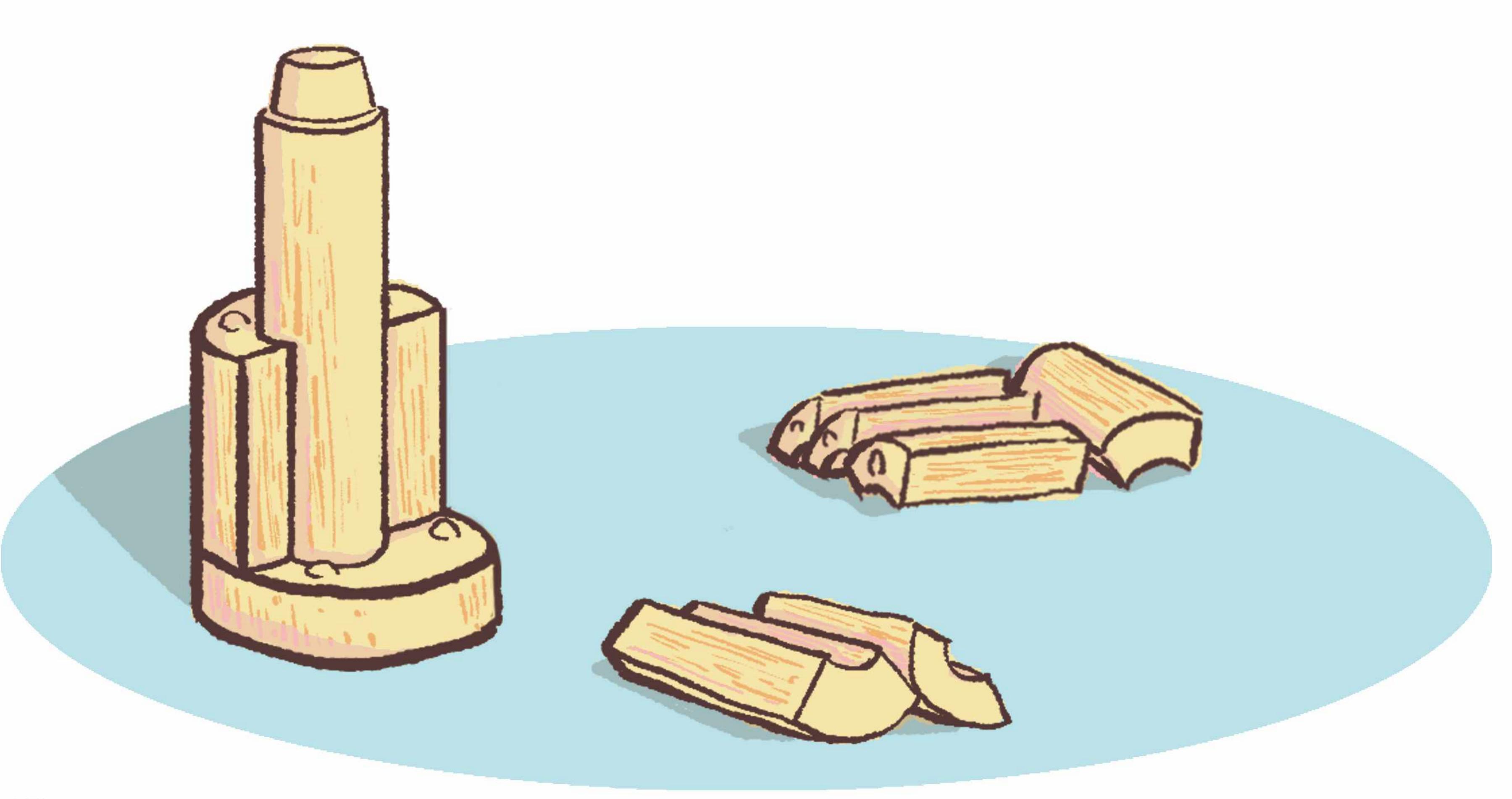






To allow the completed Claydoscope tube to be removed in one piece, the harvest mouse engineers constructed the mould in multiple parts to be more easily taken apart.

Captain Blue Tit and Bee Squad are showing Ms. Swan how the mould works. Because next, she is going to pour the prepared casting slip from the colourful little bucket into the assembled mould.



Hello there, I'm Kai. Thank you for finding this story about
Claydoscope. I used to imagine that there was a little boy inside my
body who held a kaleidoscope to view the world. Until one day, it
slipped from the boy's hands and shattered on the ground, revealing a
new world. The colourful beads that sprang from the kaleidoscope were
like candies; when he consumed them, they carried him into a
dreamland.

The environment along the East Sussex coastline gave me a new appreciation for this long-buried imagination. The seaweed on Fairlight Glen Beach, the white chalk cliffs of the Seven Sisters, and the winding Cuckmere River made me feel the hidden potential in nature. Why not use natural materials like clay to create a temporary kaleidoscope, much like the ever-changing clouds in the sky over the town?

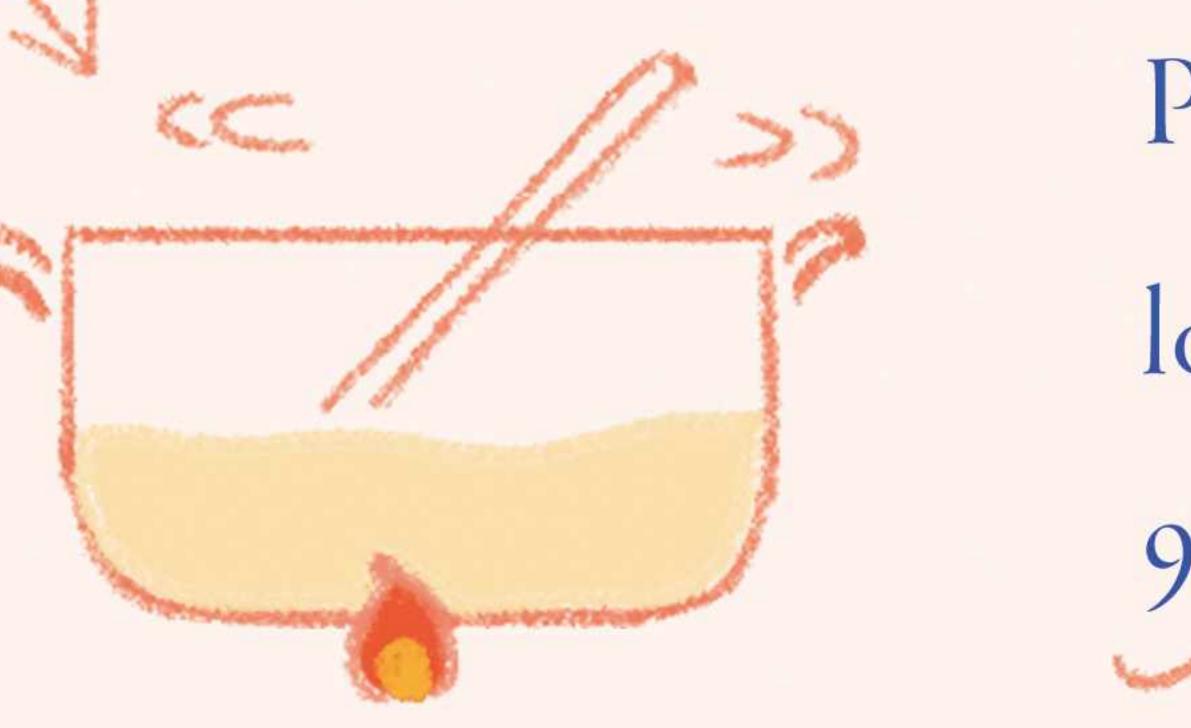
Therefore, I'd like you to join in creating and experiencing this special Claydoscope. From the outer pages of the picture book, you already have a general idea of the process of making a Claydoscope. You will find more specific instructions for creating each part in the inner pages.



The reason for choosing to use bioplastic for the lens is that, in addition to being biodegradable, it is smooth enough to allow the coloured objects to move easily when turning the Claydoscope.

- Mould: a flat container, can be a silicone mould, a baking tray or a plate.
- Bioplastic: (for a 20cm x 20cm container)
  - 1. 60ml water
  - 2. 12g gelatine
  - 3. 3g glycerine

soak in water to soften it first can prevent sticking to the bottom

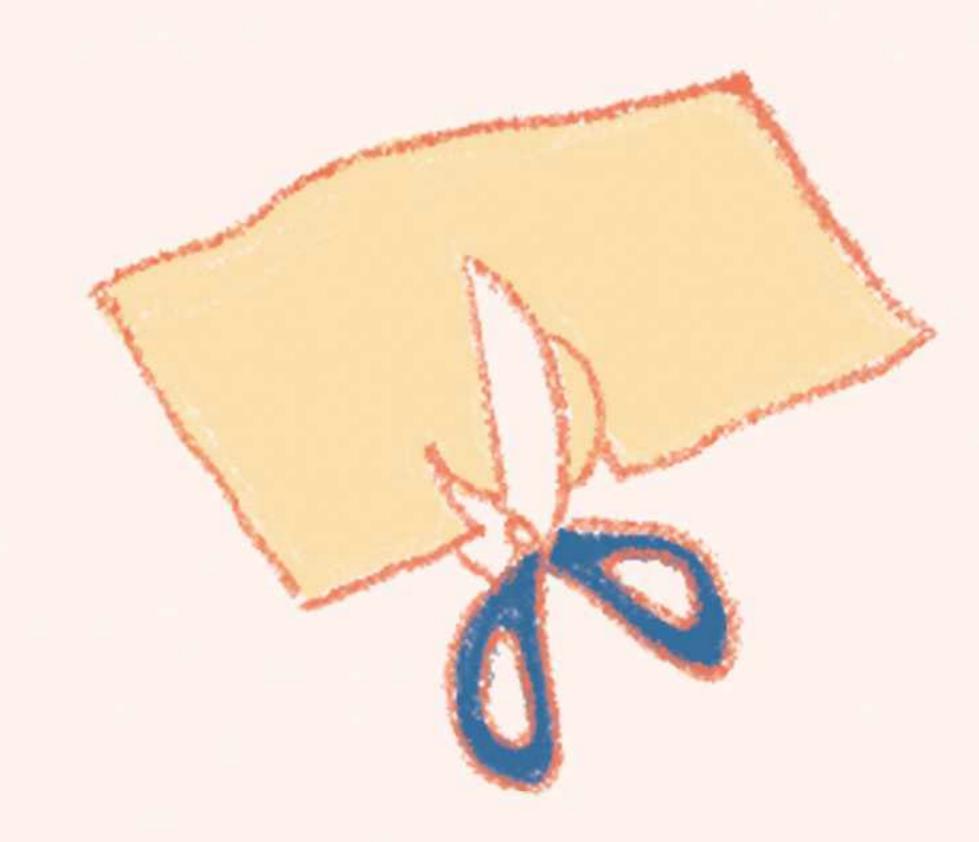


Place the ingredients in a saucepan, turn on low heat and simmer until it reaches about 90-95 °C, stirring continuously. (Avoid boiling to prevent excessive bubbling)

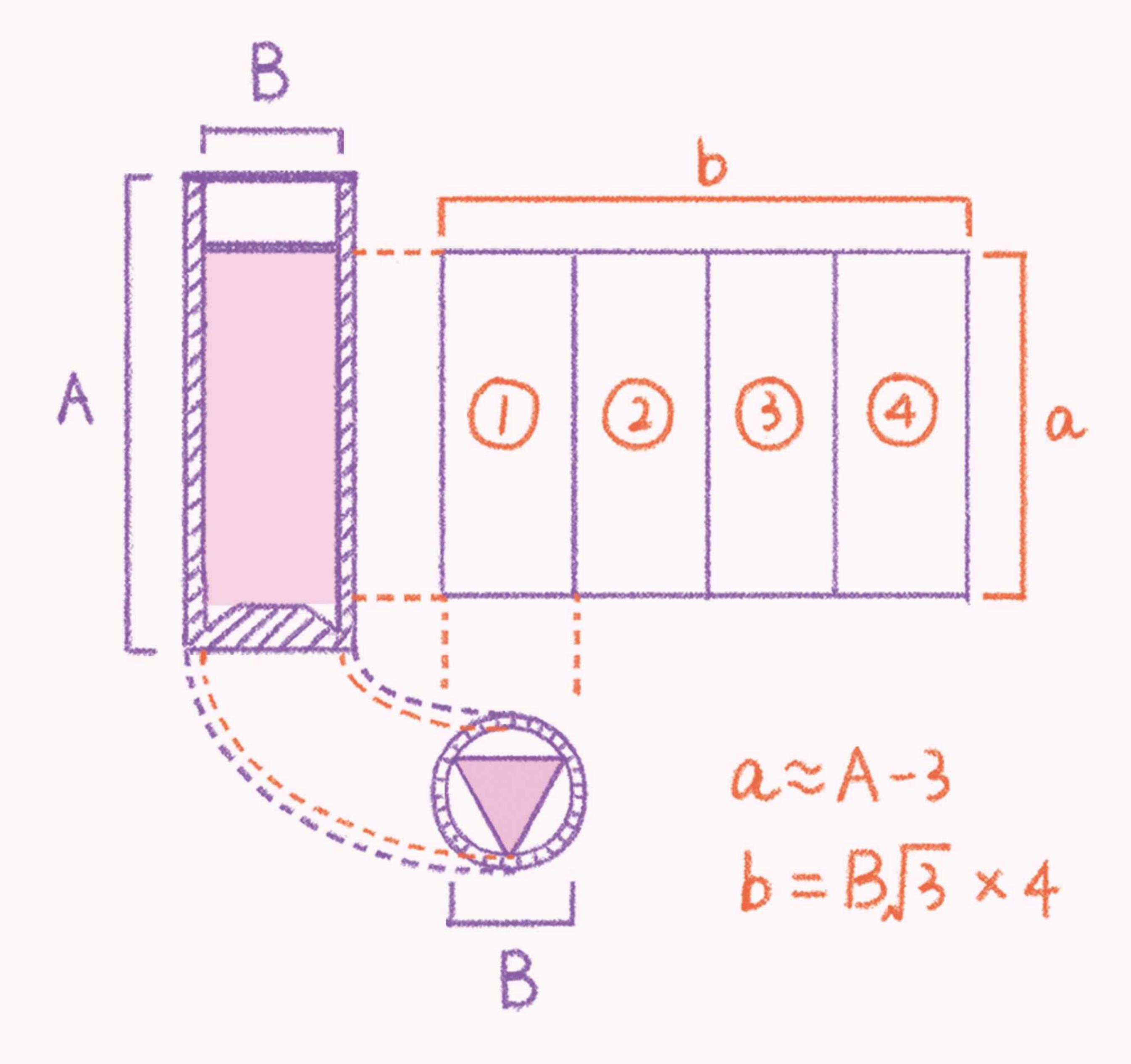


Pour the liquid into the mould, let it cool well and dry in a cool place for three days.

Cut out circles of the size you want.



The mirrors of the Claydoscope are made from folded aluminium foil into a uniform triangular prism. The most crucial step in making this part is the measurements.



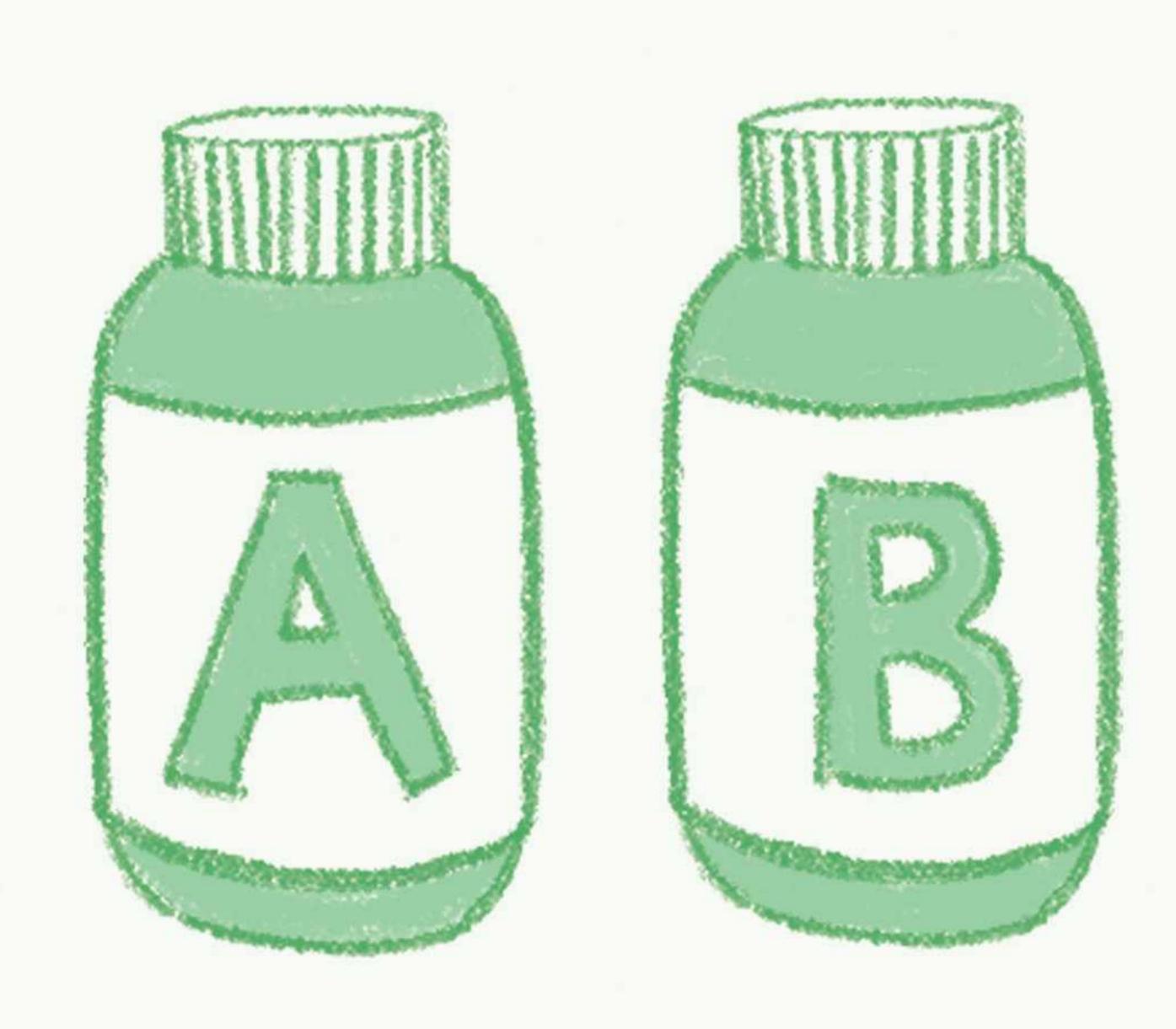
The width (a) of the foil is approximately the external height of the tube minus 3 cm, and the length (b) is 4 times the diameter of the inner circle of the tube multiplied by the radical 3.

Fold the foil three times equally and stick double-sided tape on the fourth side to secure it.



The objects I use in Claydoscope are minifigure gummy candies.

In order to make this specially shaped candy, we need to make our own silicone moulds. Here I will briefly describe the process of making the moulds.

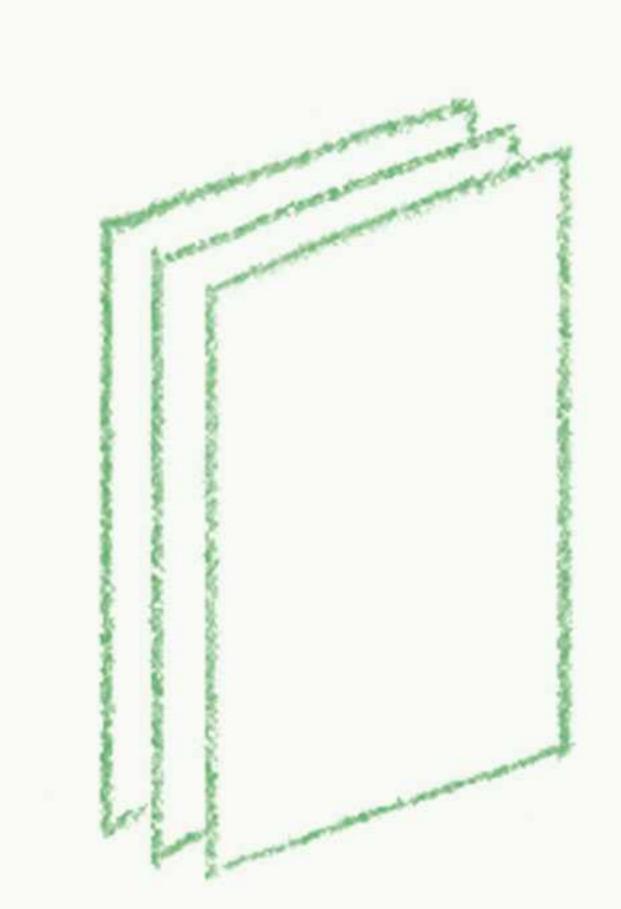


The main material used to make silicone moulds is silicone rubber. (If you want to eat the candy, you must choose food-grade silicone rubber).

Normally the moulds are made by mixing two bottles of silicone rubber, A and B, in the proportions indicated and letting them sit for a while.

The rest of the materials are containers for making the moulds (I use plastic sheets, you can also use other containers), plasticine, mould objects, plastic or wood rods, glue and a craft knife.

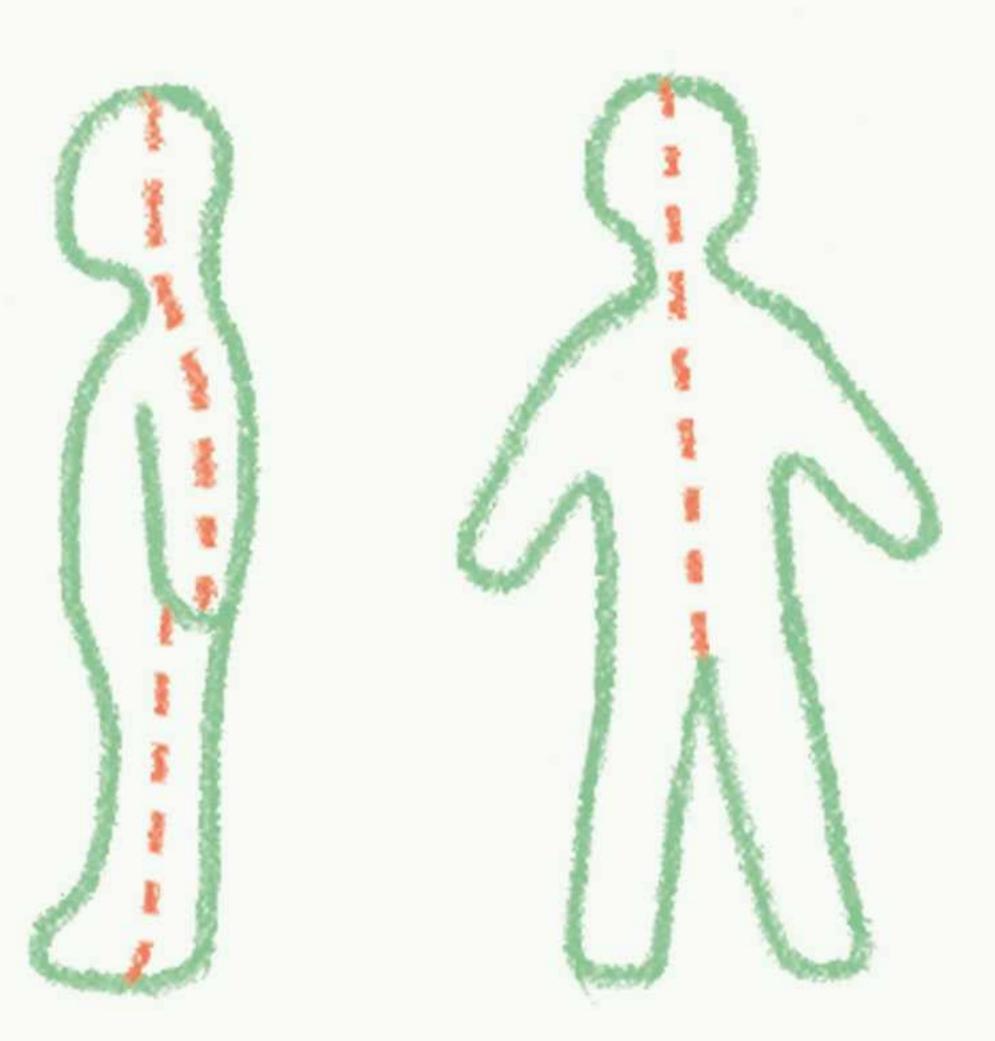






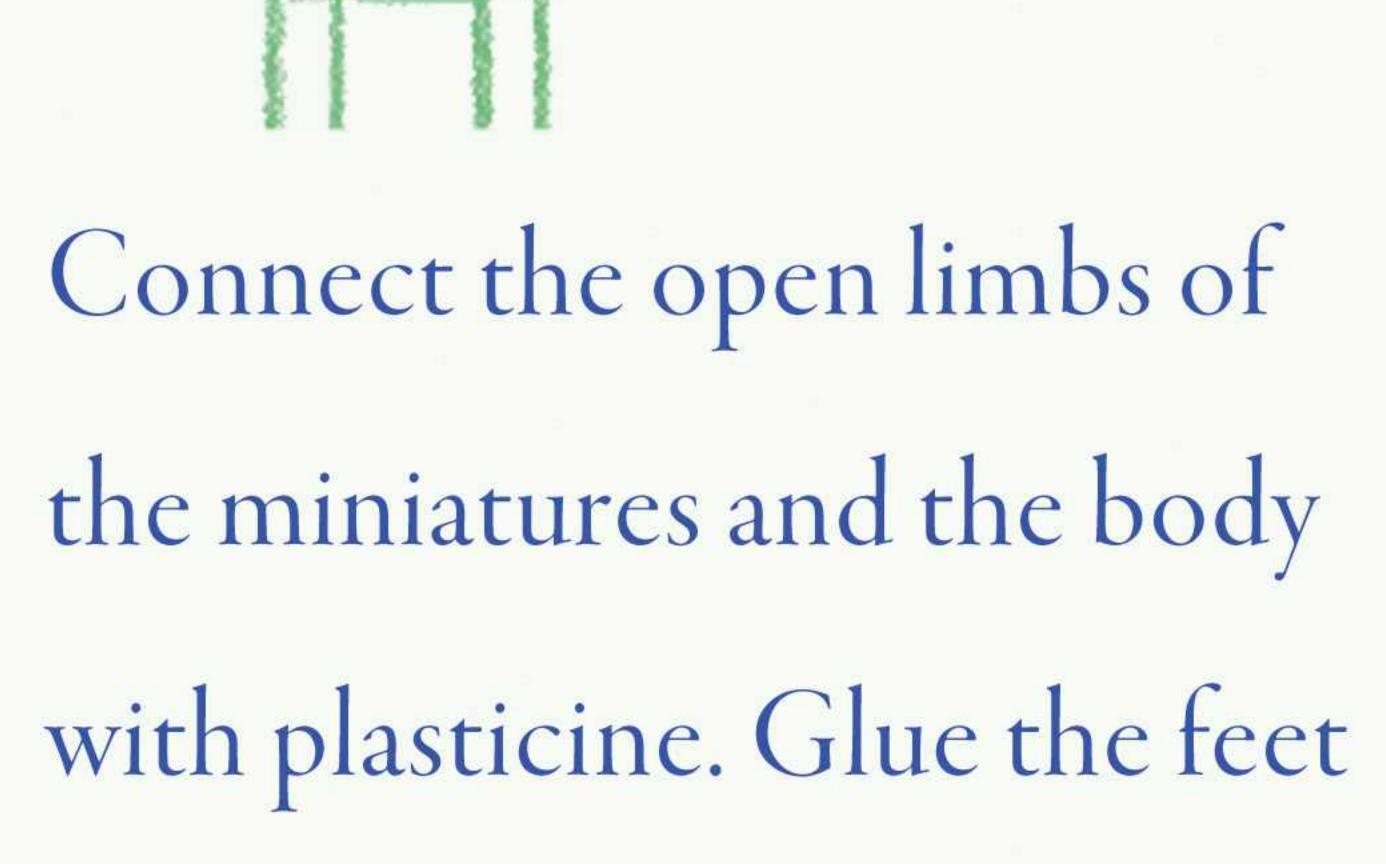






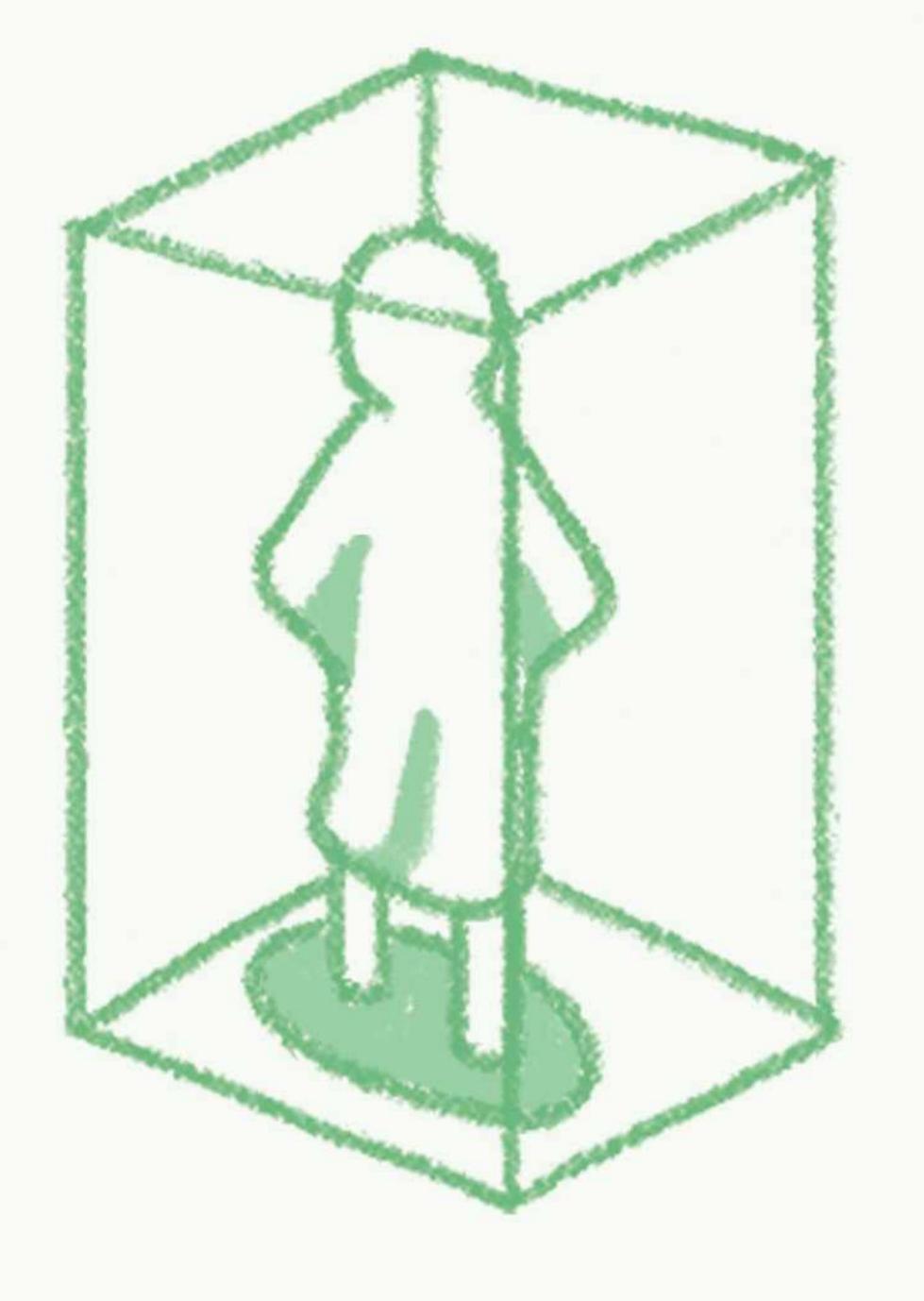






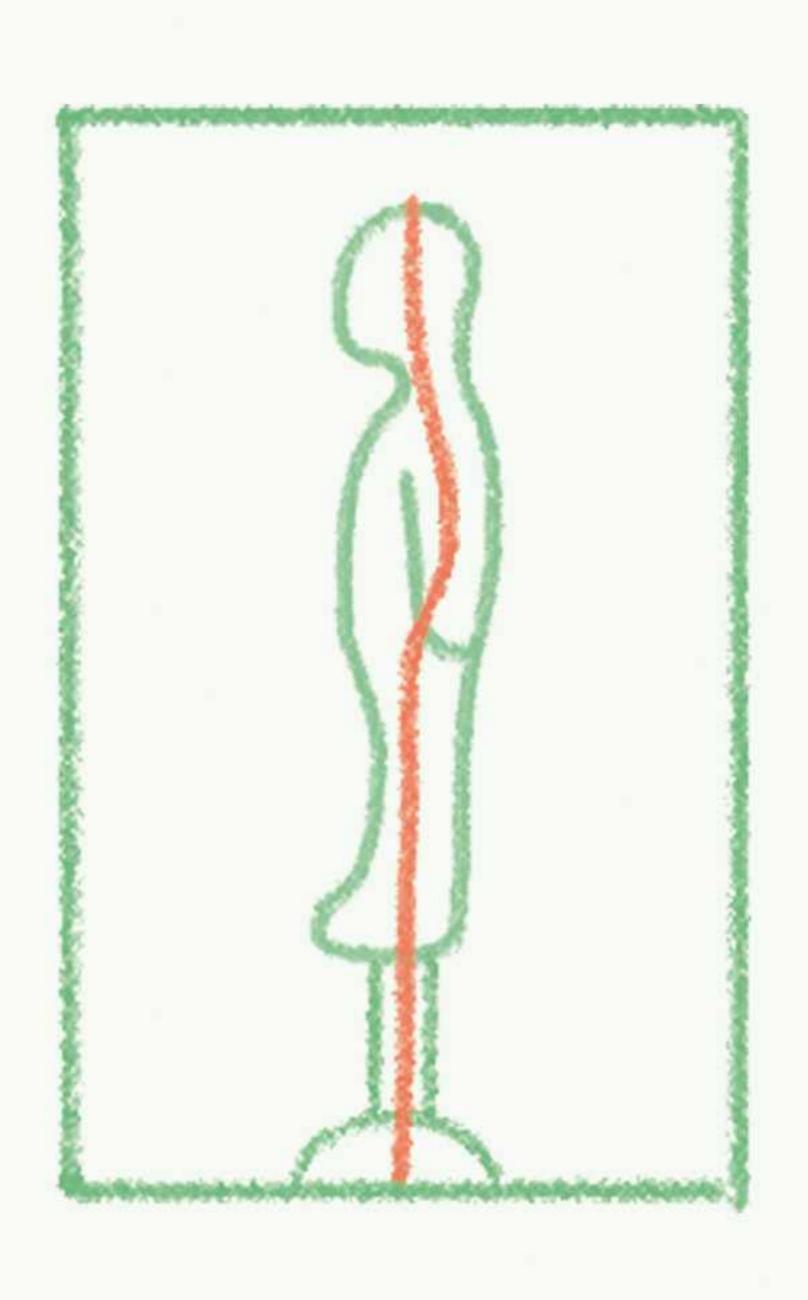
with two short rods.





Secure the bottom with plasticine and glue the plastic sheets in place. Check that the seams are sealed. Pour the silicone rubber in.





Cut along the centre line of the side and remove the object. Be careful not to cut the mould completely in half. Clean the mould.

Next, we started preparing to make the gummy candies!

## Recipe of Gummy Candy (1 portion)

#### Materials

rubber bands, spoon, scale, saucepan, glass dropper and silicone mould

## Liquid

18ml water/juice

(reduce sugar according to the sweetness of the juice)

#### Thickener

3g gelatine

(soak in liquid before simmering)

### Sugar

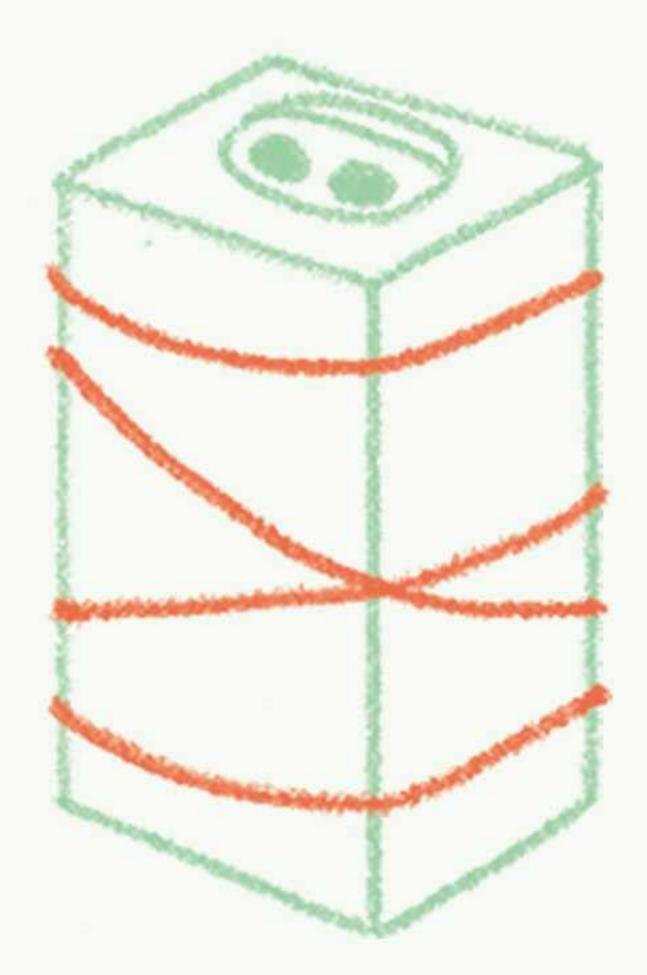
3g granulated sugar and 5g corn syrup (or glucose syrup)

#### Addition

food colouring, citric acid or lemon juice



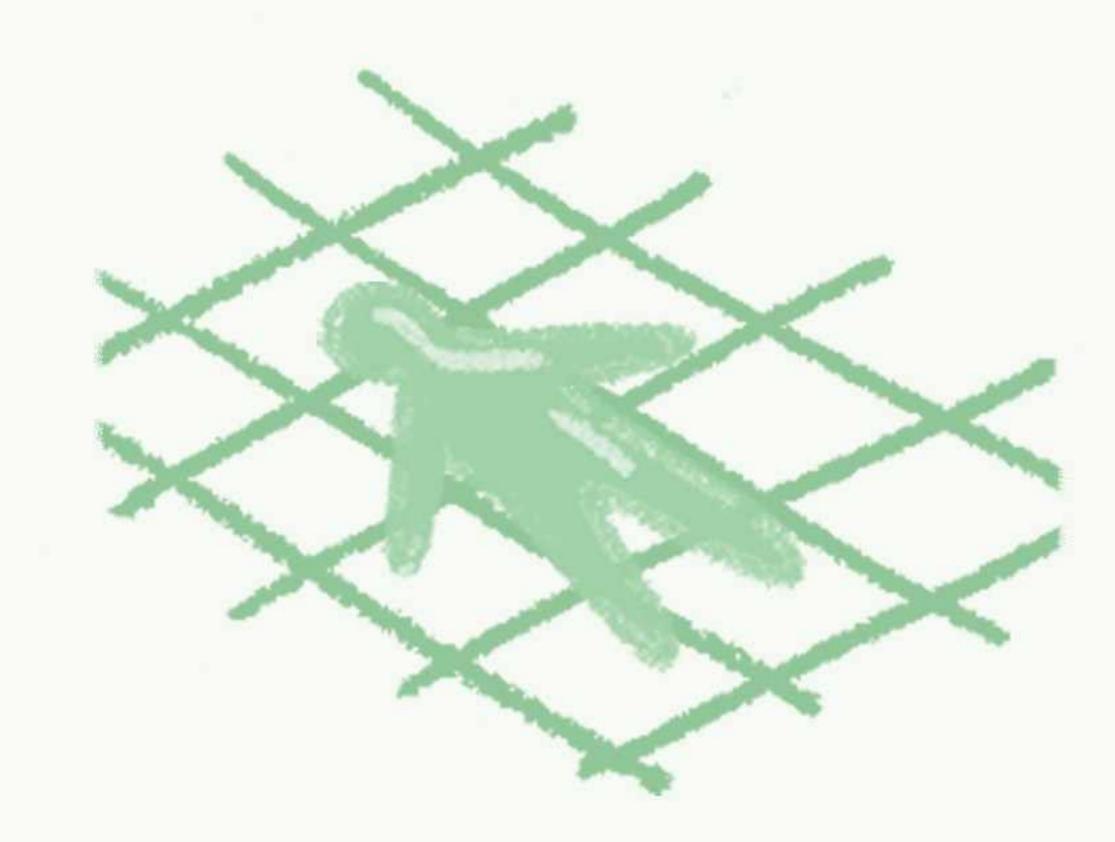
Similarly to the method for making the lens, put ingredients in a saucepan over low heat and bring to a simmer until it reaches around 90 °C. Stir the liquid continuously to dissolve the sugar and gelatine completely.



Tighten the silicone mould with a rubber band to prevent the liquid from leaking out.



Use a dropper to inject the liquid into one of the opening of the silicone mould so the liquid can push the air inside the mould out of the other opening.



Put the mould in the fridge for half an hour, let the liquid solidify into a more resilient jelly. Gently remove the jelly from the mould and place on a drying rack for a day.

## Tools you might use when looking for wild clay:



# Safety & Legality

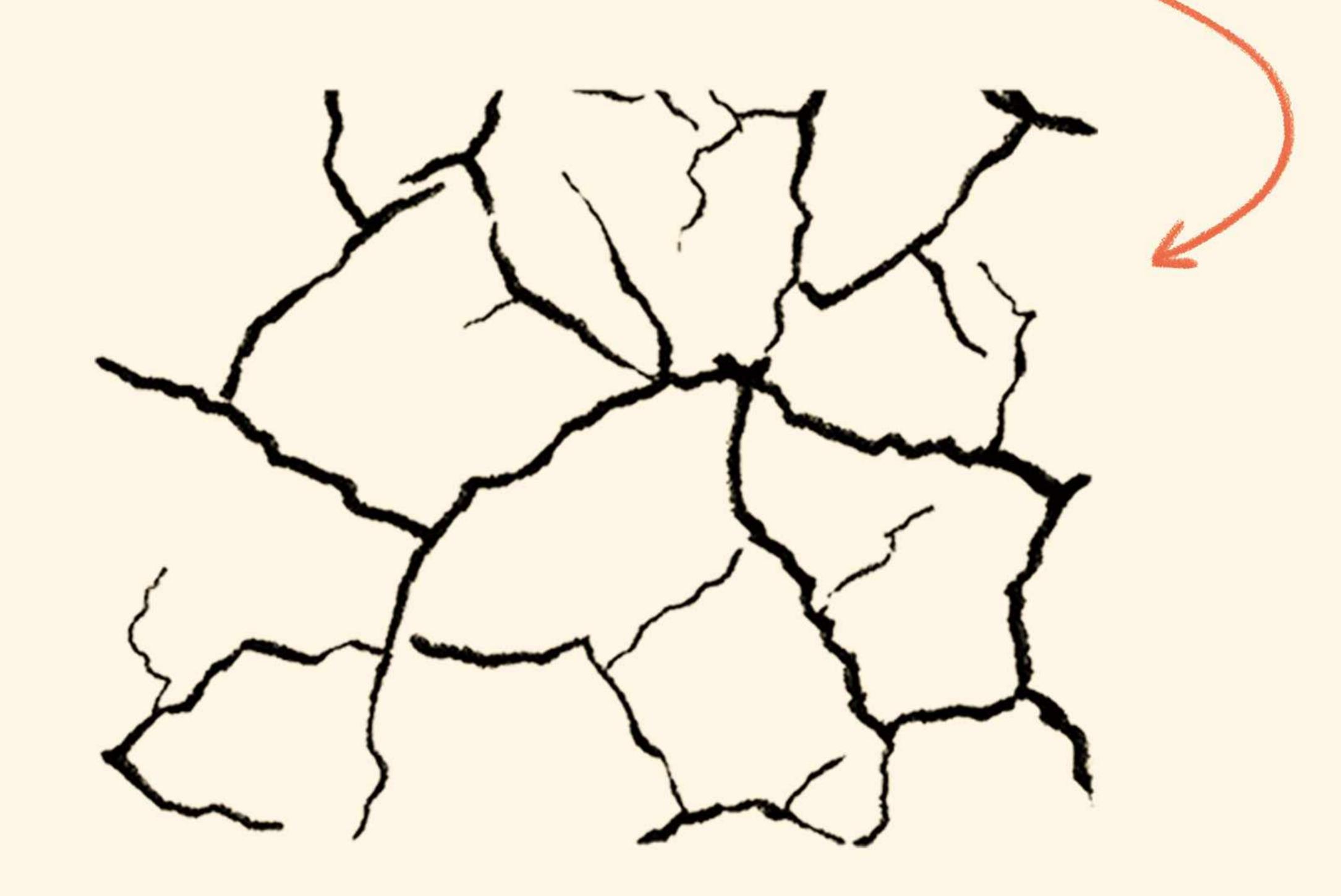
Before setting out in search of wild clay, you need to understand the legality of collecting it. Legally, you need to get permission from the landowner. Do not dig for clay on private land without permission.

Wild clay is often found near water sources such as streams and ponds, so you must be extra careful about walking on slippery surfaces. You may also find clay on cliffs along the coast, but be aware of the possibility of rockfalls from above.

Be aware that you need to collect clay away from walking areas, as holes created by digging can become a road hazard.

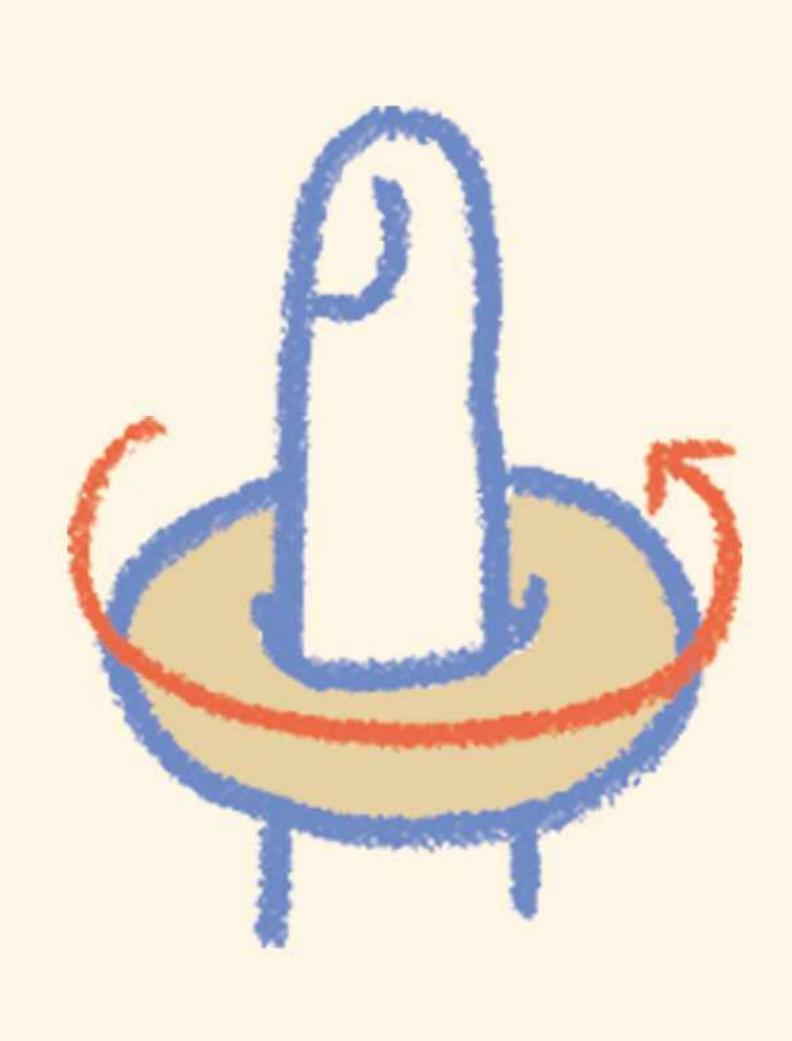


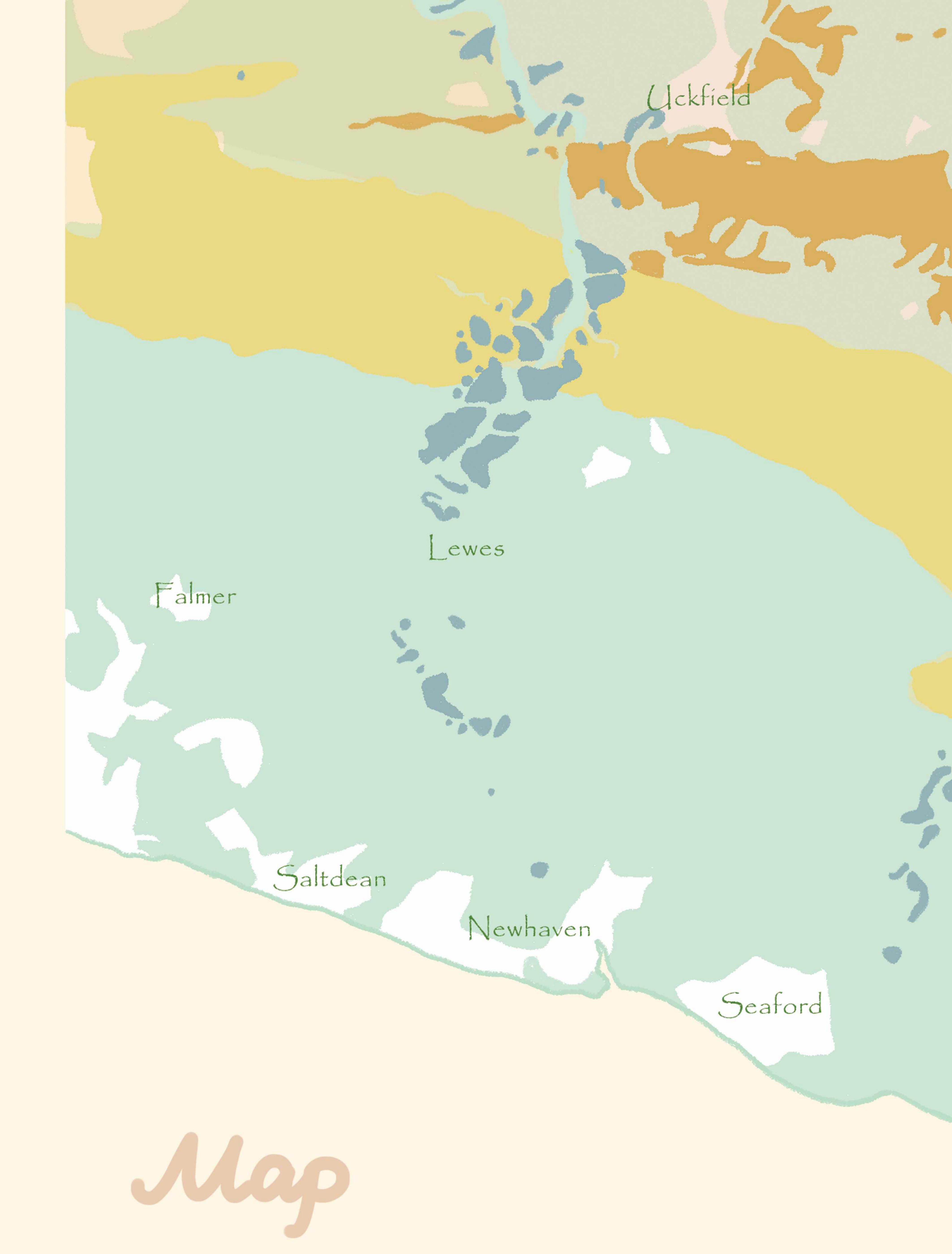
Wild clay can be initially identified by looking at the texture of the soil. Wet clay soil is usually very fine and sticky and can leave clear shoe prints when stepped on. Dry clay seems as dense as a rock, and patches of clay will crack as it dries.




You can also use the "ribbon test" to identify the soil's clay amount. Roll a small amount of moist clay into a long strip and wrap it around your finger (or, in the case of dry clay lumps, crush it into small particles with a stone and mix it with a small amount of water first). If it cracks or breaks during bending, it is too "short" and lacks plasticity.











# Organic surface layer

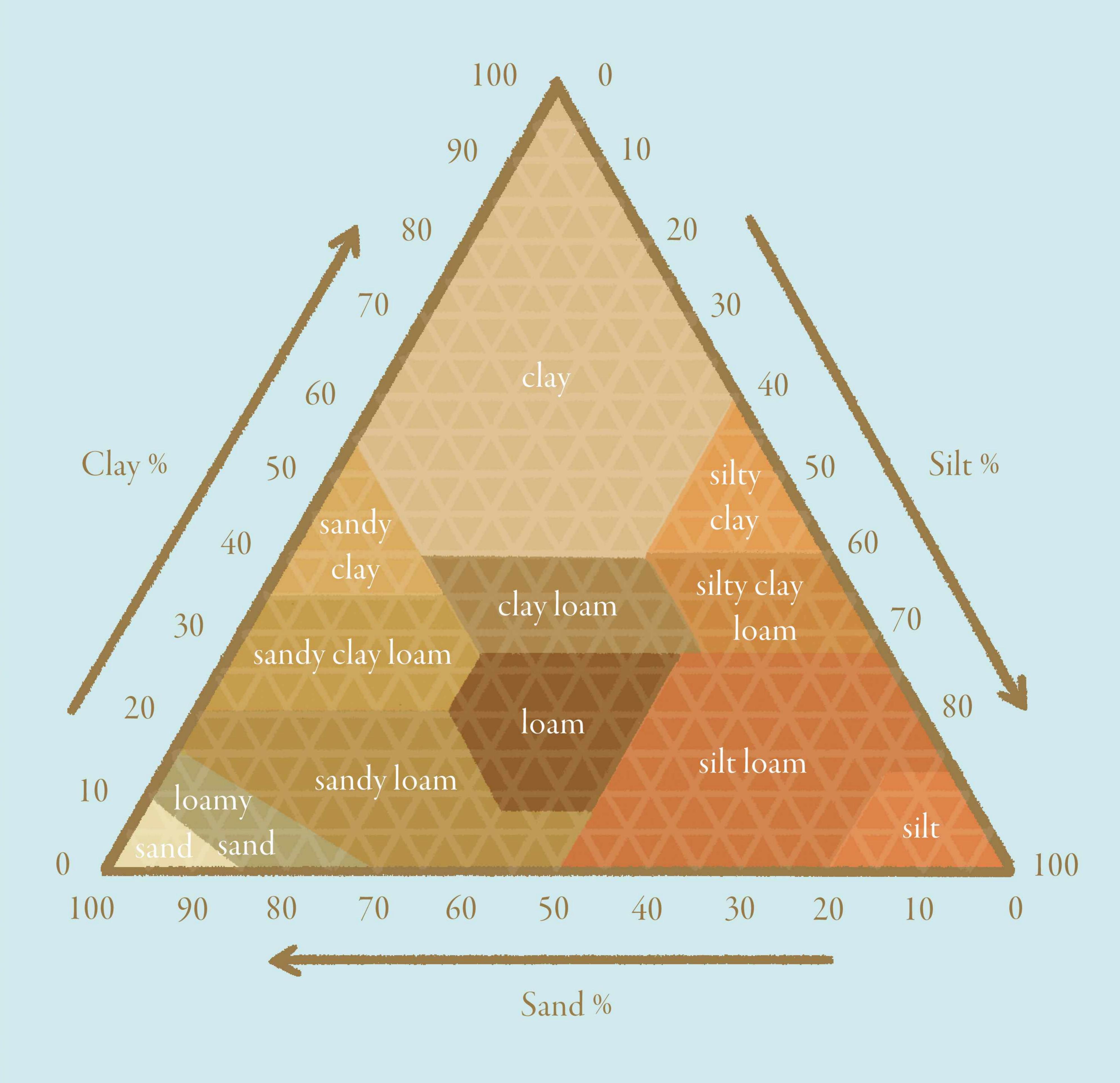
# Topsoil

Clay minerals are formed and accumulated.

Subsoil

Substratum

# USDA Soil Textural Triangle



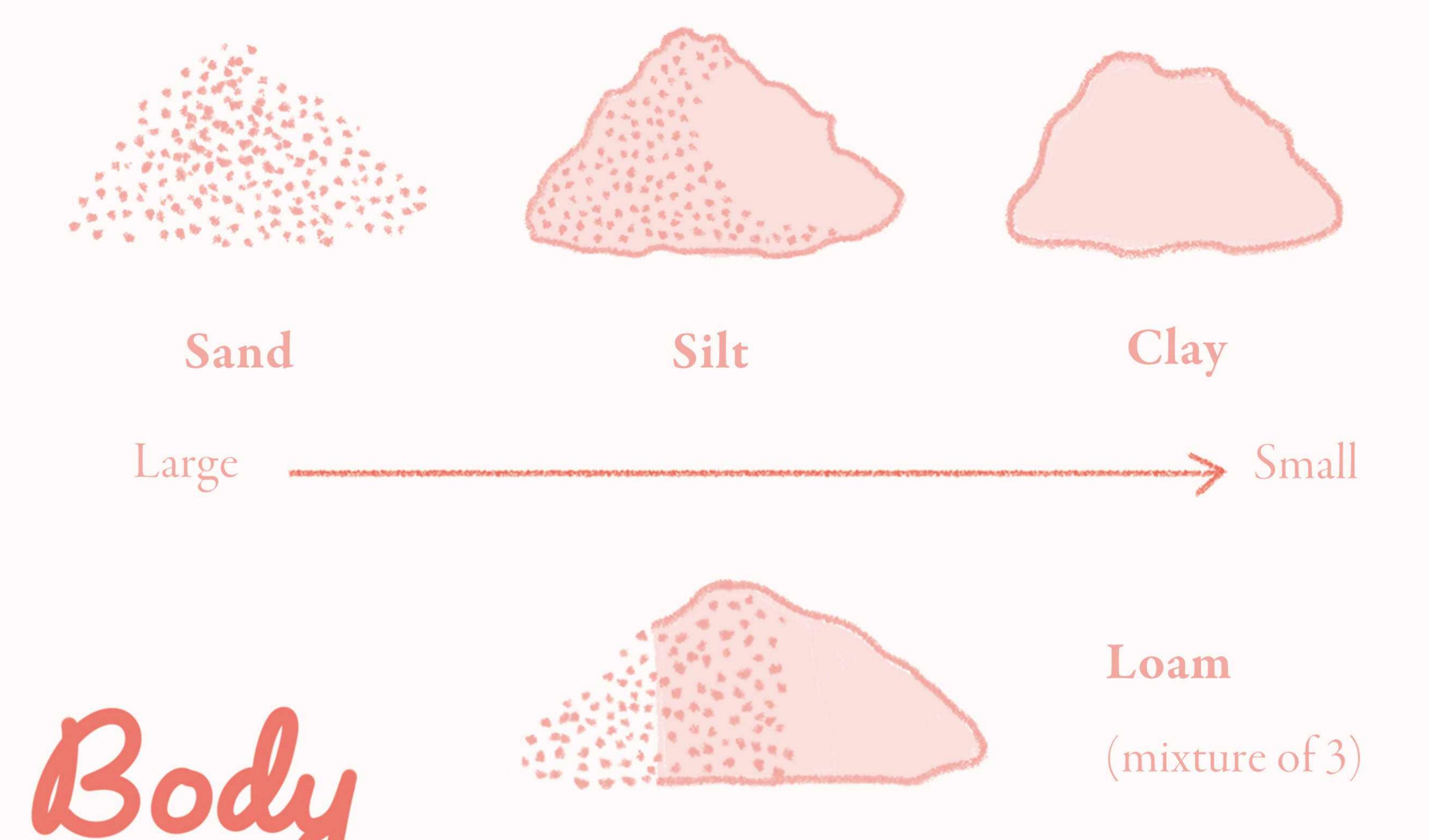
Bedrock

Soil Hypes

Wild clay is taken directly from nature with no additional ingredients added. In fact, both commercially produced clay and wild clay are natural materials.

The clay minerals are produced by the chemical weathering of rocks over a long period. The composition of the source rock and the different weathering and erosion effects of nature on the rock form different soils.

Generally speaking, there are no pure clay mines. The soil contains varying sand, clay and silt proportions, forming different soil textures (and may contain various organic substances).

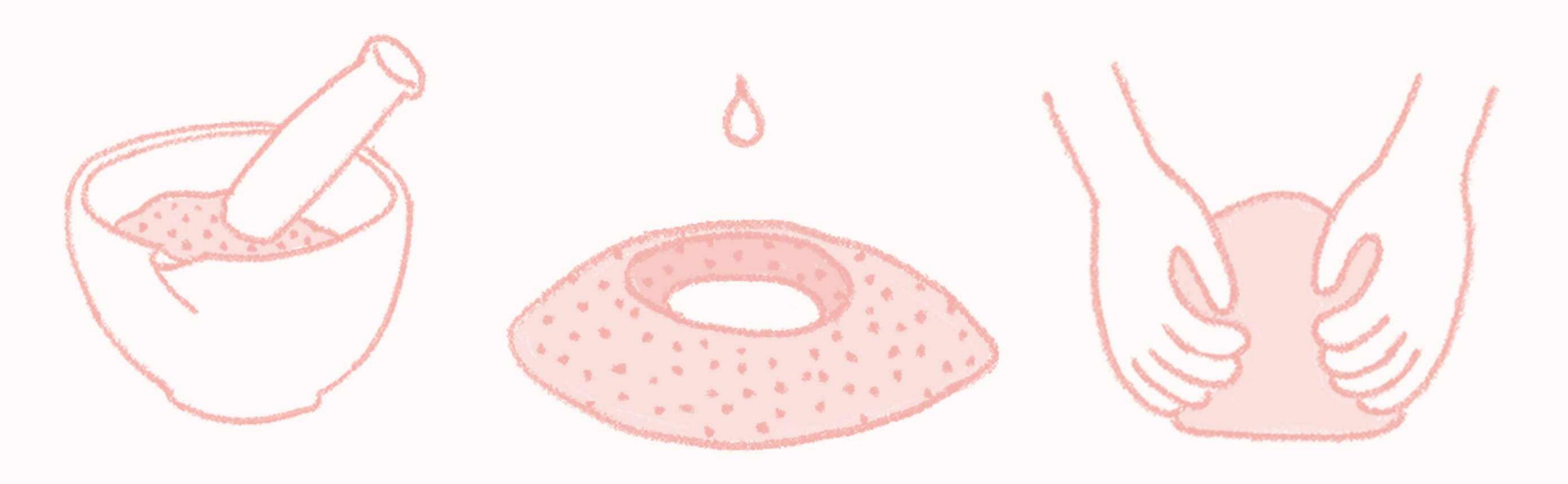


Let's begin by describing how to prepare untreated wild clay into a purer clay dough that can be shaped.

\*\* Note: See the back of the illustration for information on how to find and test wild clay.

Wild clay can be processed in both dry and wet ways.

We can use a tool such as a stone mortar to grind the clay lumps into smaller grains for dry clay with fewer impurities. The larger particles are then sifted out with a sieve, ground repeatedly, and pick out the apparent sand and gravel particles. Water can then be added to the clay powder in small quantities and kneaded into a clay ball in the same way as you would knead dough. Knead well, cover with plastic and leave to rest for a day.



Dry method of processing clay

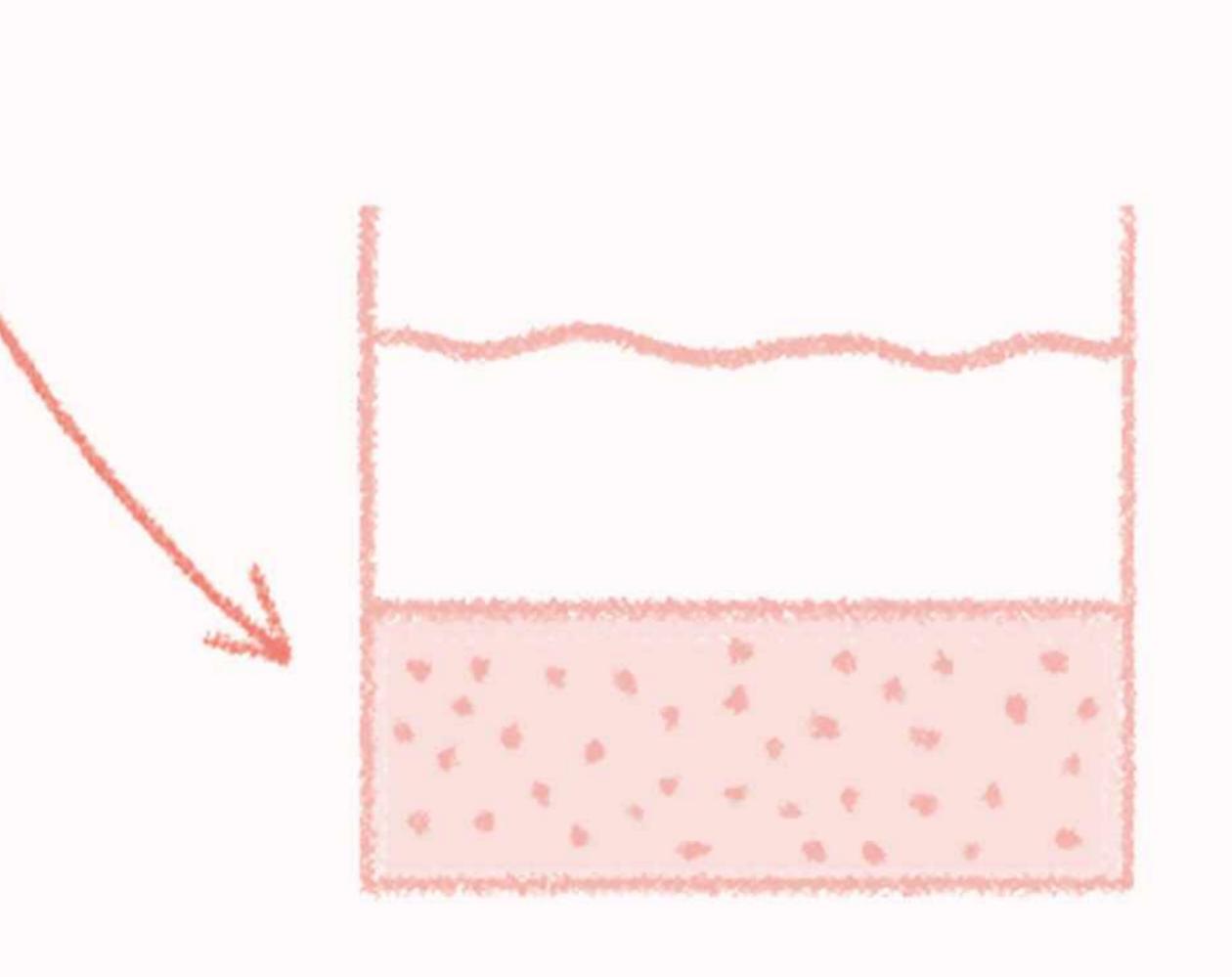
For moist clay collected from deeper soils or wet environments, divide it into small pieces and soak them in enough water for a day.

On the second day, the clay that has been softened is mixed well with water using a mixer or by hand. It is then filtered through a sieve to remove sand and gravel impurities and left to stand for another day.

On the third day, the clay will sink to the bottom of the container.

Pour out the water on the top, put the rest of the slip into a cloth bag or pillowcase made of fine material, and hang it to dry. The moisture will slowly drip out.

Leave to dry for many days before taking the clay out and kneading it on a plaster or wooden board to reduce the moisture further.



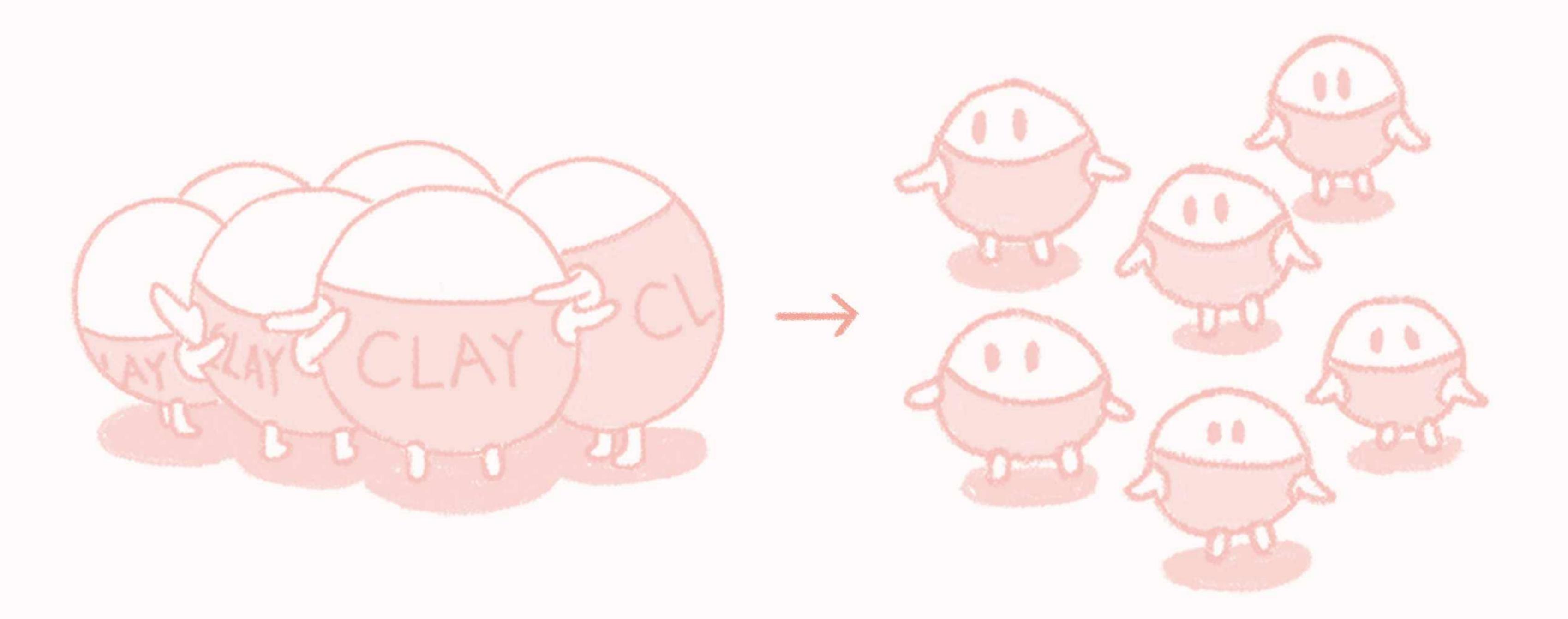


Wet method of processing clay

Next, we can use slip casting to make the body of the Claydoscope from the processed wild clay. A usable casting slip needs adjustments based on the previous step.

If you use ground clay powder, you can mix it following the 100:83 water-to-clay ratio, i.e. 100g of water to 83g of dry clay. After standing overnight, mix thoroughly with deflocculant (e.g., sodium silicate and sodium dispex) to the slip in the recommended proportions.

In the case of wet clay, the easiest method is to mix small pieces of clay with water and leave it to stand. When the water floats on the clay, pour as much water as possible. Then, add tiny drops of deflocculant until the clay does not stick to the mixing utensil.

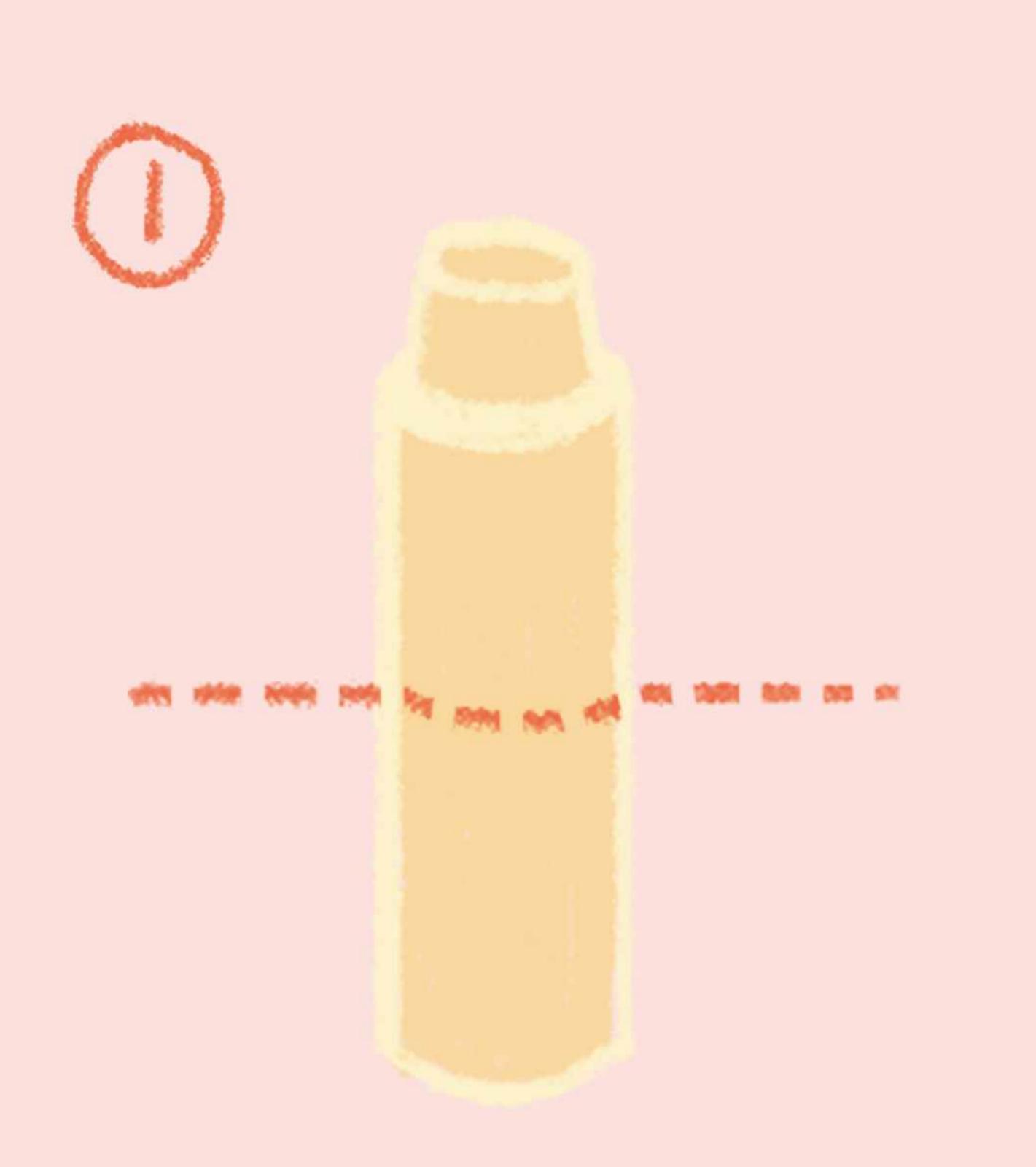


In simple terms, the function of a deflocculant is to reduce the viscosity of the slip by dispersing the clay particles into separate units.

Making the body of the Claydoscope using the slip casting method needs plaster moulds. Here is a general way for making a two-piece mould.

#### Material:

pottery plaster, water, weighing scale, bucket, clay, PVC sheet, straps, oil soap, brush, mask, a teaspoon or coin.

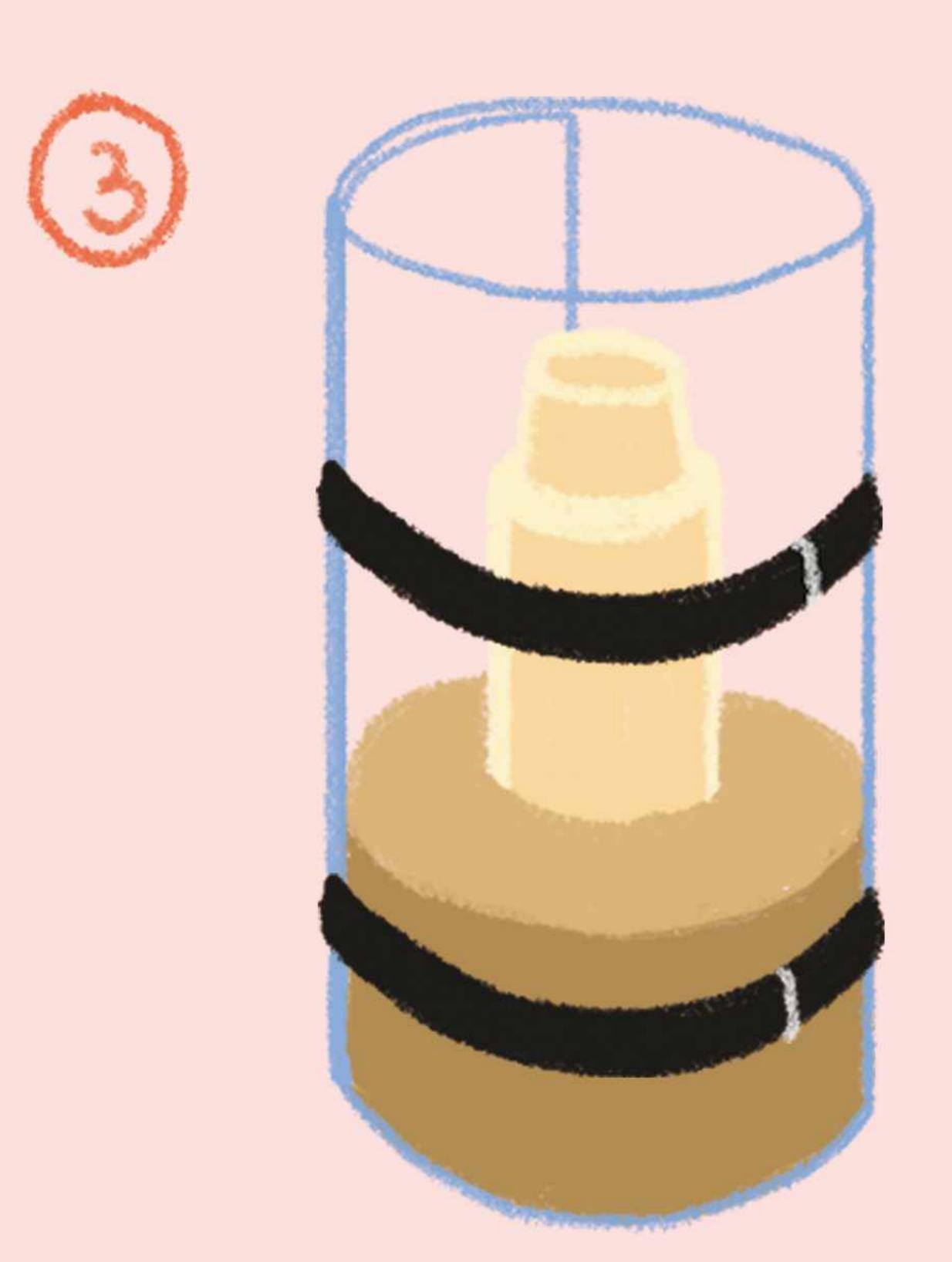


Draw the middle line of the object that will be moulded.

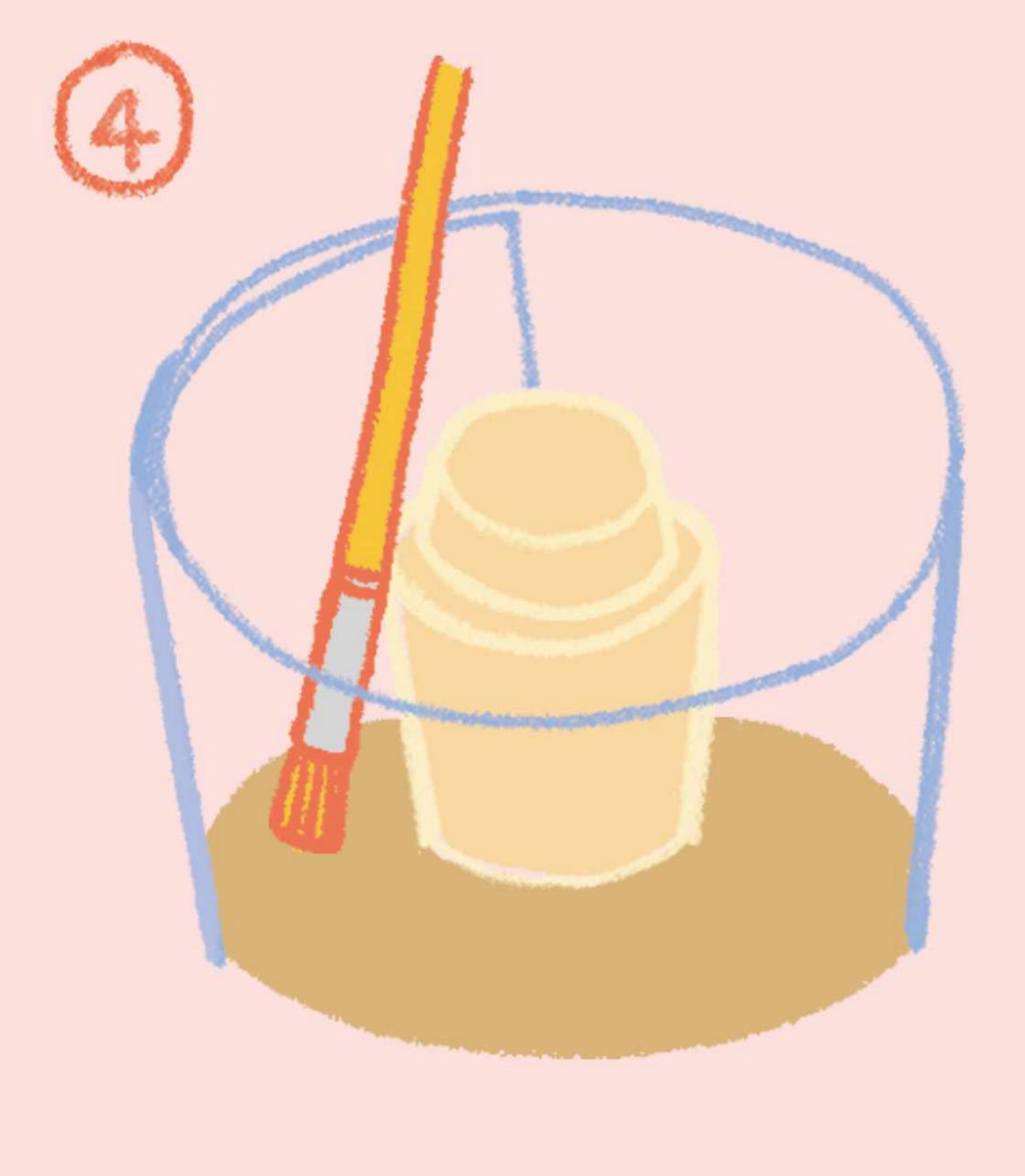


Wrap the area below the centre line in clay to create a "wall" about 4 cm thick.





Enclose with a PVC sheet and then
fasten tightly with straps. To prevent
the plaster from leaking out, fill any
gaps in the wrapped area with clay.



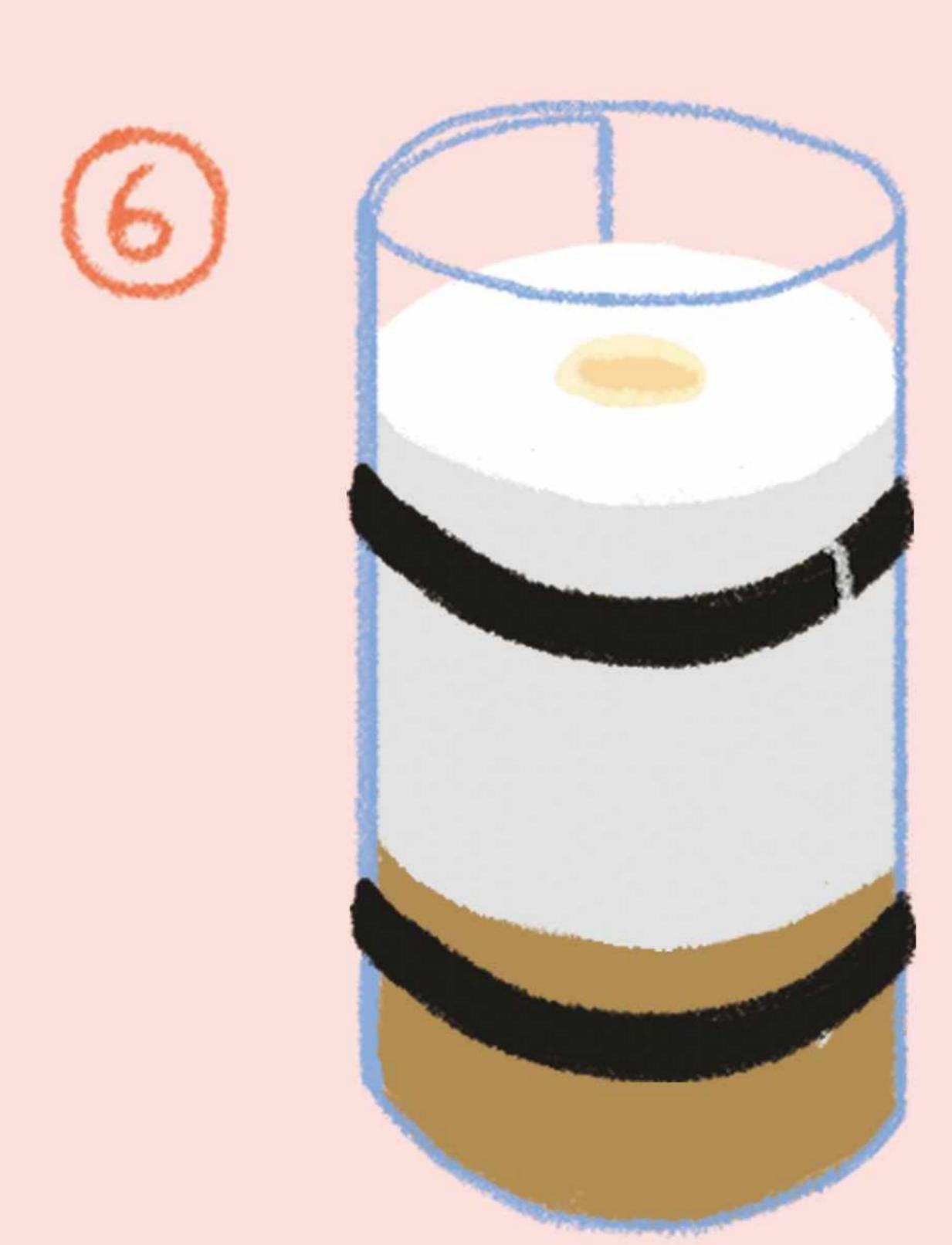
Brush several layers of oil soap onto the surface of the clay and the moulding object.



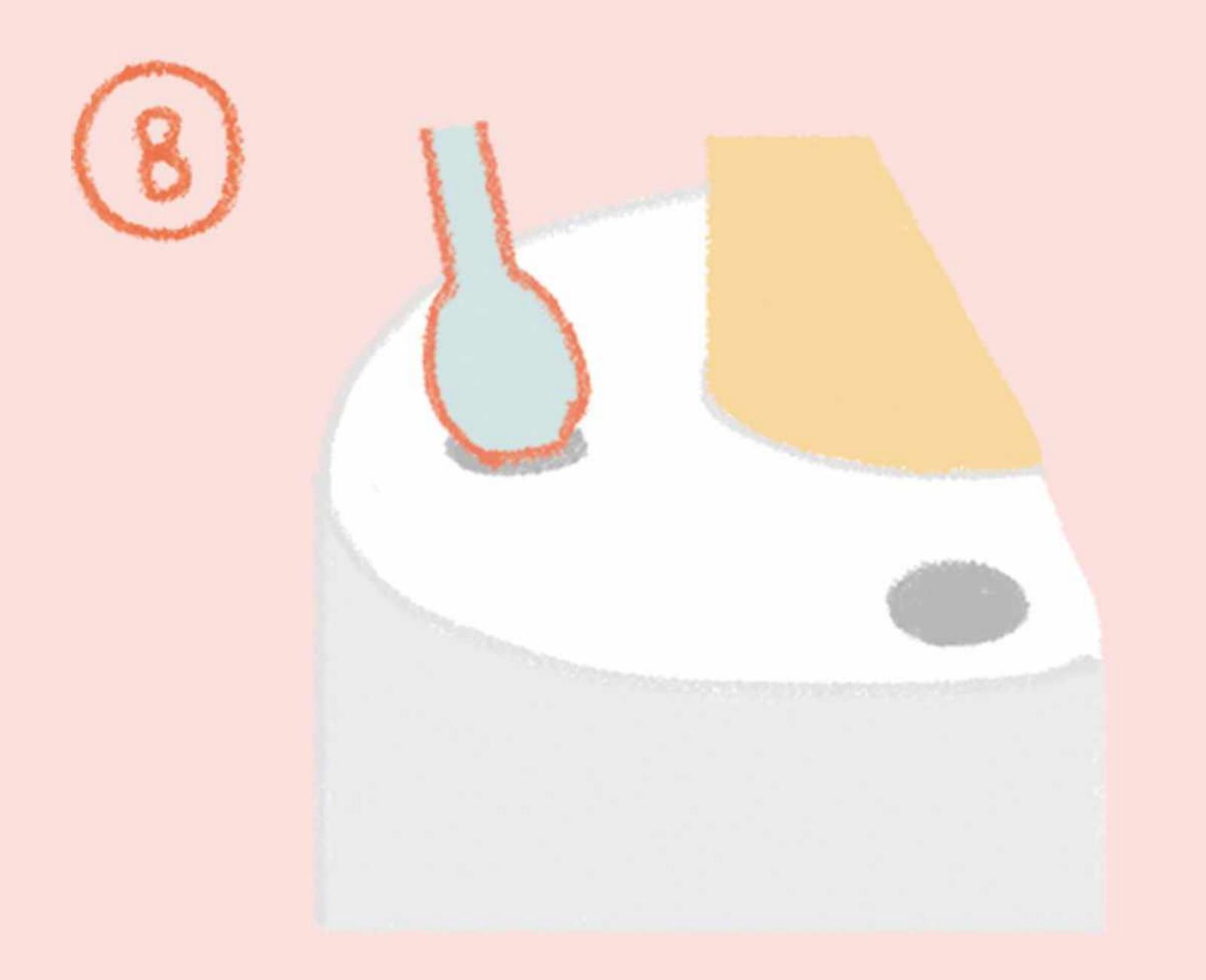
Please wear a mask and mix the plaster in a ventilated environment.

(5)

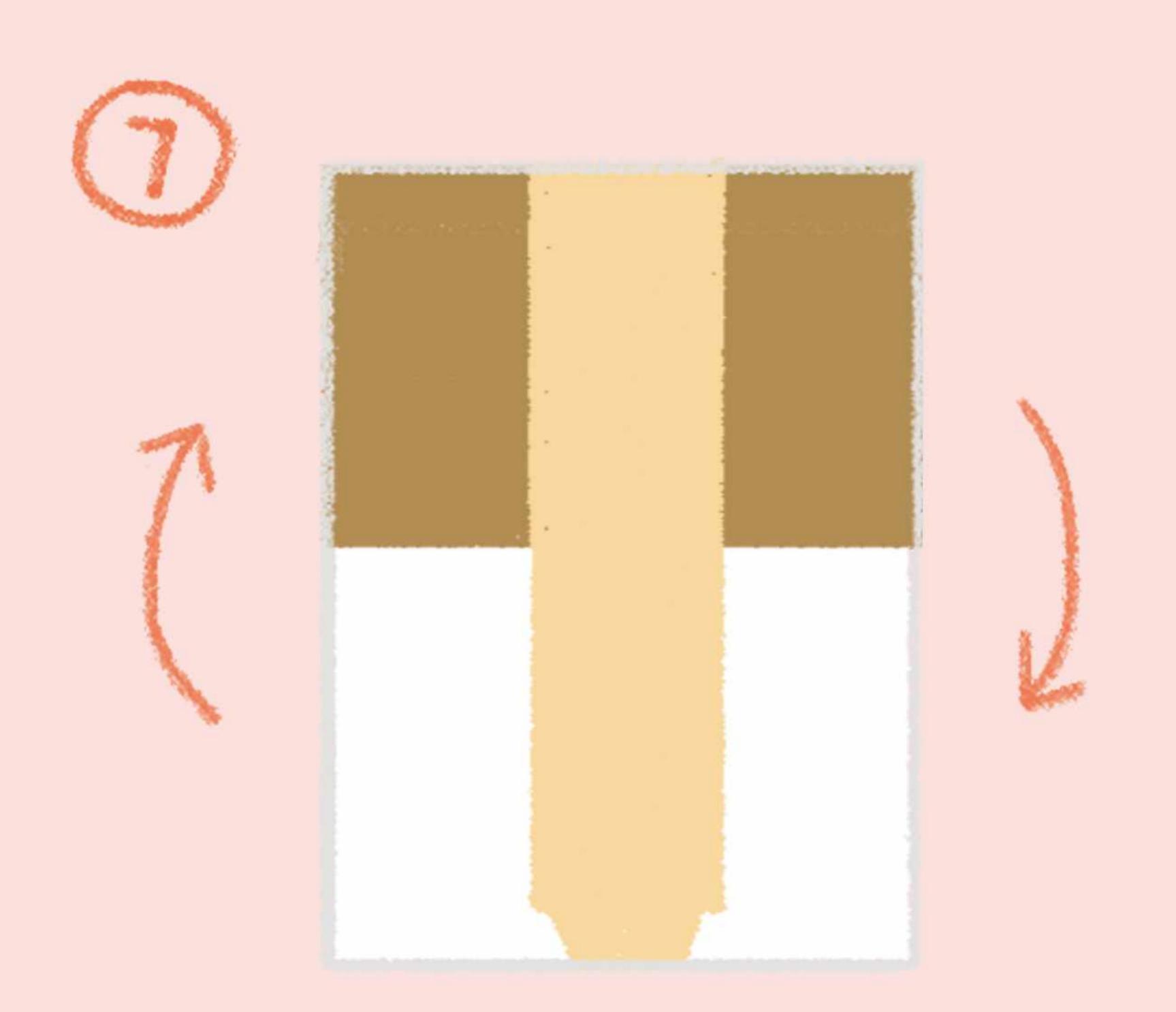
Weighed the water according to the mixing ratio recommended by the plaster manufacturer. Then, spread the corresponding weight of the plaster evenly into the bucket filled with water.



Pour the well-mixed plaster into the cylinder so that the height of the plaster is level with the top of the moulding object (or 5mm lower).



Using a spoon or coin, dig several small hemispherical holes into the moist plaster on the side that touches the clay.



Once the plaster is set (still warm), remove the PVC sheet, turn it over, remove the clay section and wipe off any clay on the plaster.

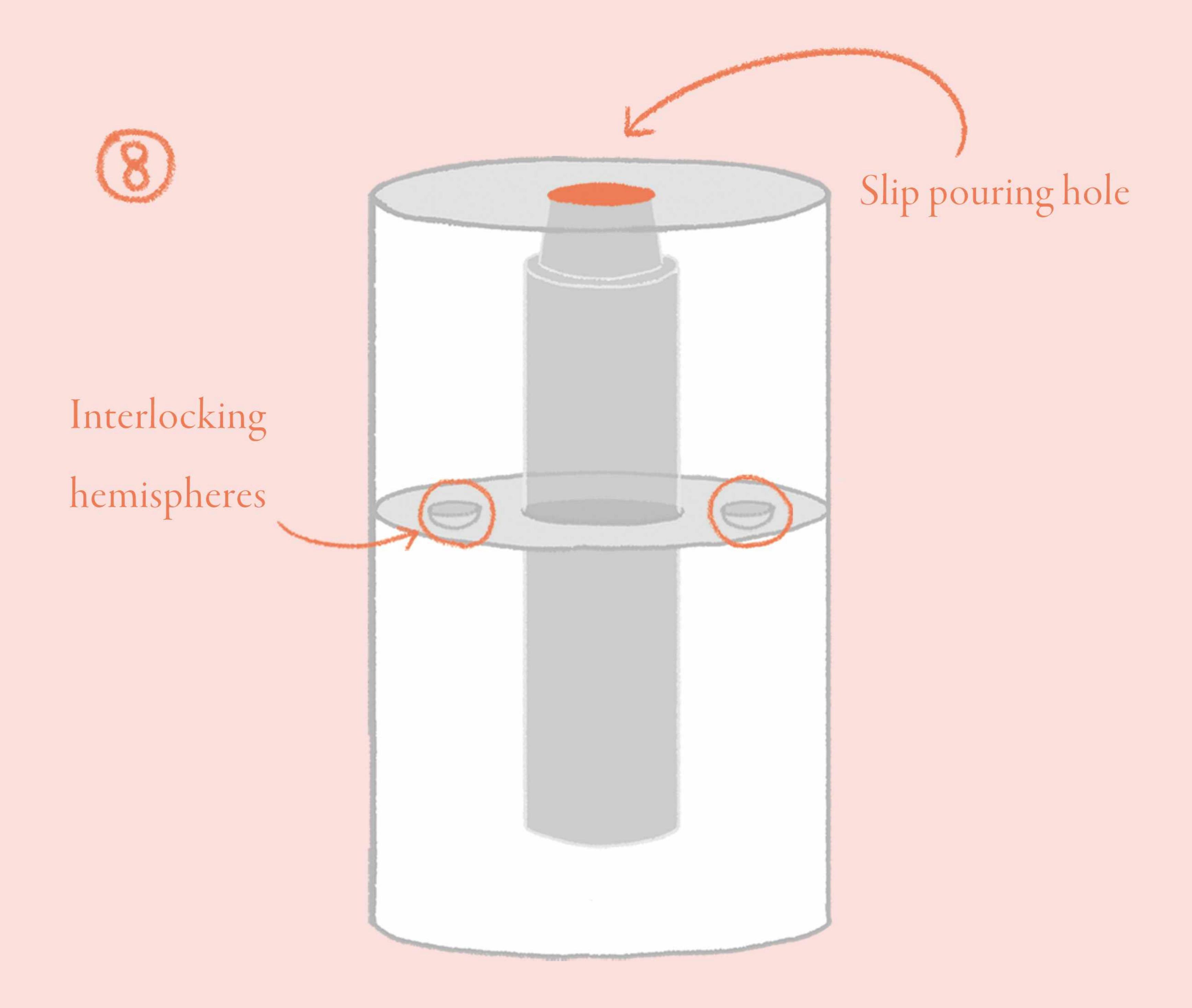


Make the other half of the mould in the same way (brush oil soap as step 4).

#### NOTE:

Do not pour any excess plaster mixture directly into the sink.

Mix the remaining plaster with more water and wait until the plaster in the bucket has completely solidified and then sieve and dispose into the bin.



Finally, put two moulds together and left to dry for one to two weeks, then they are ready to be used for slip casting.

